

NAVAL EVOLUTIONS:

O R,

A System of Sea-Discipline;

Extracted from

The Celebrated TREATISE of P. L'HOSTE,

Professor of Mathematics, in the Royal Seminary of Toulon;

CONFIRMED BY EXPERIENCE.

Illustrated by EXAMPLES from the Most Remarkable Sea-Engagements
between ENGLAND and HOLLAND;

Embellished with EIGHTEEN COPPER-PLATES;

And Adapted to the Use of the BRITISH NAVY.

TO WHICH ARE ADDED,

An Abstract of the THEORY of SHIP-BUILDING ; An Essay on
NAVAL DISCIPLINE, by a Late Experienced Sea-Commander ;

A General Idea of the Armament of the FRENCH NAVY;

With Some PRACTICAL OBSERVATIONS ;

By CHRISTOPHER O'BRYEN, Esq;

Lieutenant in His Majesty's Navy.

L O N D O N :

Printed for W. JOHNSTON, in LUDGATE-STREET.

MDCCCLXII.



T O

HIS ROYAL HIGHNESS,
EDWARD, Duke of York, &c.

S I R,

I Most humbly presume to address your Royal Highness, and beg your acceptance of the following performance, translated from the work of the most able and experienced man in France, of his time, and esteemed a master-piece in its kind.

As there is nothing of this sort in the English language, (though greatly wanted) I flatter myself, it will not be thought unworthy the notice

A 2

of

D E D I C A T I O N.

of a Prince, who makes our marine so much his study, and from whom the greatest things are justly expected.

I beg leave to subscribe myself, with all imaginable submission and respect,

S I R,

Your ROYAL HIGHNESS's

Most humble,

Most devoted,

And most dutiful Servant,

19 JY 64

CHRISTOPHER O'BRYEN.

Thomas Howard: His Book August the 12. 1762—

On board the Montague Capt. Howley in the Fleet commanded

INTRODUCTION.

By Sir Edw. Hawke.

THOSE who have any knowledge of the marine, will undoubtedly allow, that the ART of NAVAL EVOLUTIONS is absolutely necessary; since this art consists only in the manner of regulating the several movements of a naval army. Without this art it resembles that of the most barbarous nations, who have not the least knowledge of war; who act without any other rule or order than what their wild ungoverned imaginations suggest to them, or chance throws in their way. Without a proper knowledge of the art of evolutions, an admiral will dispose of his fleet but very imperfectly, whether in opposing the enemy, cutting them off, doubling upon, avoiding, or chasing them to the greatest advantage: for all these things require, that an admiral should move each part of his fleet, as the mind moves the different members of the human body.

Without

Without a knowledge of these various evolutions, the least alteration in wind or weather, &c. may occasion great confusion in a fleet. Officers, however zealous, are at a loss how to act, or how to recover order and regularity again, when once disconcerted; ships fall a-board, and sometimes sink each other, are obliged to cut away masts, yards, &c. and consequently are subject to many fatal disasters; besides losing perhaps the favourable opportunity of gaining to windward of, or doubling upon the enemy, which they will undoubtedly avail themselves of, if you do not. Whereas a knowledge of the proper management of a fleet, removes all these embarrassments, which they are otherwise liable to. It shews general-officers, as well as particulars, what they can, and what they ought to do in such circumstances, and likewise deprives them of any pretext they might make to cover their ignorance, on failure of duty, in not following the orders or signals given them.

Besides, these evolutions are so plain and simple in themselves, that they require not the least knowledge of geometry. A little application, with some experience, will render easy and familiar all the movements of a fleet, with their proper use upon all occasions.

It

I N T R O D U C T I O N. vii

It is not to be doubted but sea-officers, who know their duty in every other respect as seamen, will as soon make themselves masters of these naval evolutions, as land-officers learn their military exercise, in forming squadrons and battalions, in ranging them properly, and giving them such wheelings and motions, as are necessary in the field, against a day of battle.

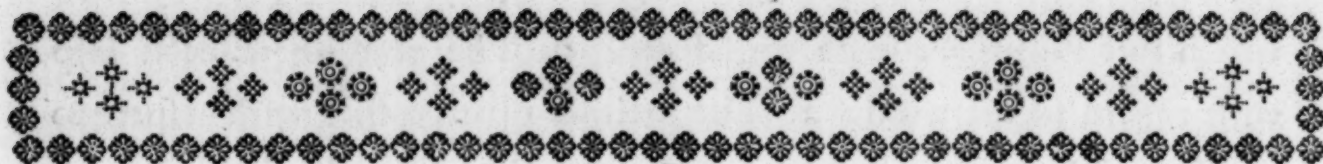
I have here added to the rules I propose, the examples of the most experienced sea-officers of the age : and have taken occasion to recite the principal engagements which have happened at sea, ever since ships of force have taken place of galleys in naval-armies, or fleets, in which their strength formerly consisted.

We must allow the marine hitherto to be a mystery to those who have never been at sea : the most exact relations, and the most faithful accounts of sea-engagements, appear to them like so many imaginary exploits, which they cannot believe because they do not understand them. They hear incontestable facts, but are at a loss what share of their applause or censure to give them : they, at last, see themselves reduced to the necessity of implicitly relying on the testimony
of

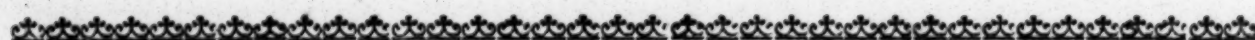
of men of the profession, on every occasion of the like nature.

I hope this abstract from P. L'Hofte's treatise, which I have endeavoured to adapt to our English navy, may be not only of use to those of the profession; but likewise to others, whose laudable curiosity, at this time while facts are recent, may excite them to acquire some general idea of our maritime affairs: that they may with the greater pleasure read and judge accordingly of the several glorious exploits of our fleets and ships, in all quarters of the world, as they are now handing down to posterity in our British annals, to be perpetuated to the everlasting fame and honour of Great Britain, as well as to the immortal glory of his late and present majesty.

NAVAL



NAVAL EVOLUTIONS.



Definitions of LINES or ORDERS.



WE call Naval Evolutions the divers movements performed by fleets or squadrons at sea, in ranging or forming them into such lines or positions as may be thought most proper or expedient; either by engaging, defending, or retreating to the greatest advantage. This term we have borrowed from land armies, where they signify, by the word Evolutions, the different motions or wheelings they give their battalions or squadrons, as may seem most advantageous, in the various methods of attacking, defending, or retreating.

Explanation of the Subject.

By orders are meant the different methods of ranging or drawing up a fleet in the several lines and forms for which it may be designed : in

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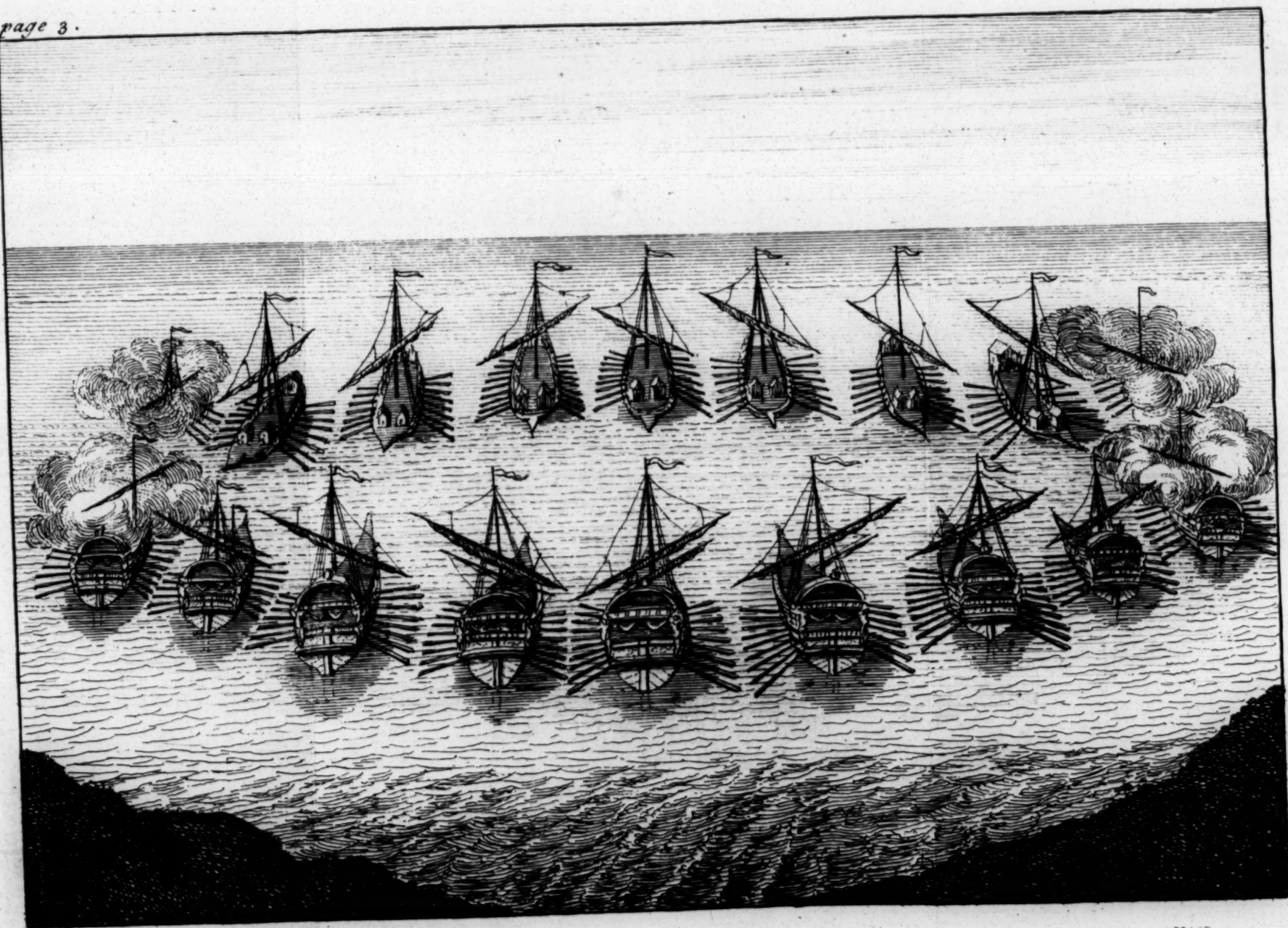
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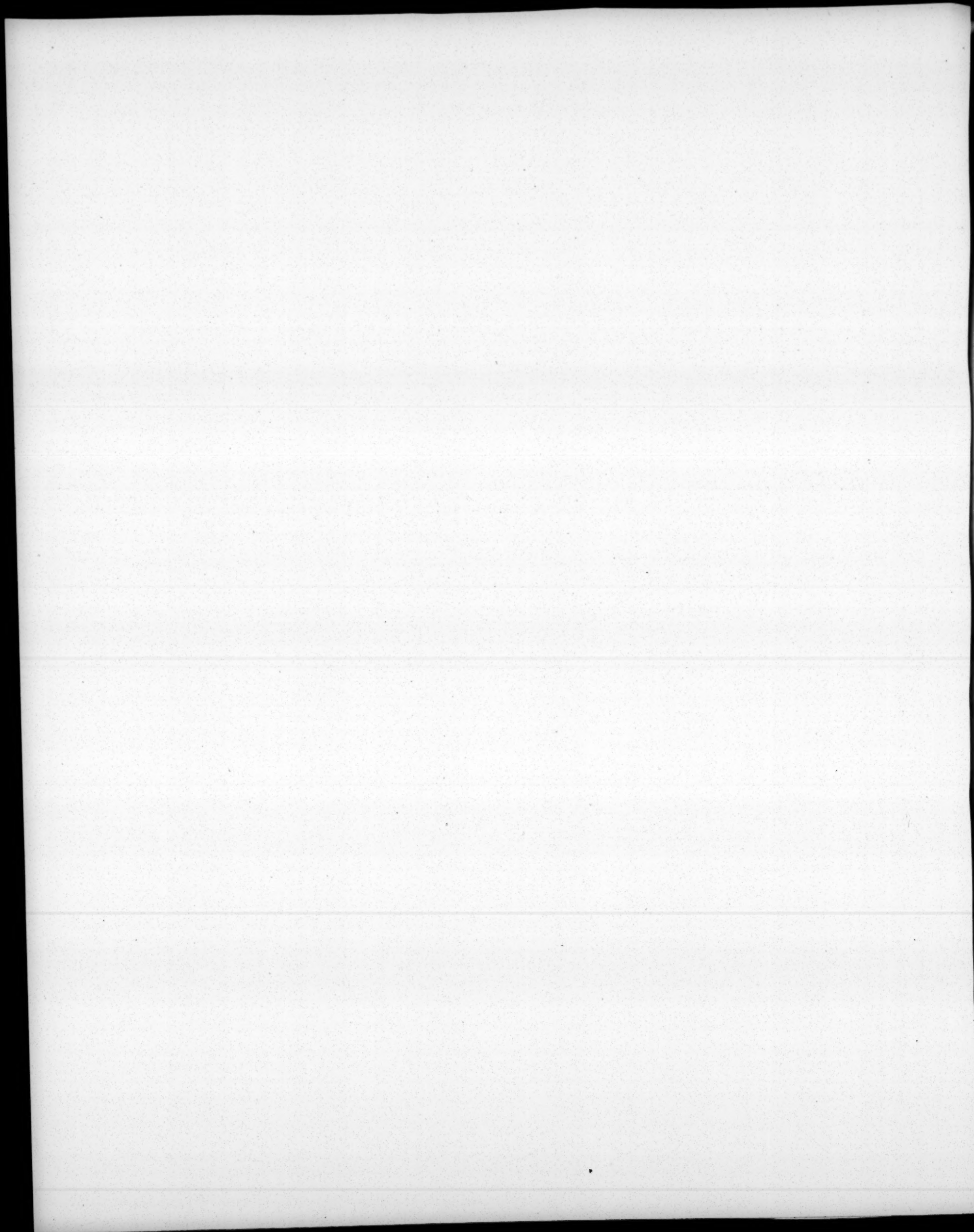
which two things are to be considered, 1. The position of each ship with regard to the wind: 2. The position of each ship with respect to the fleet. We cannot make any alteration in either of these circumstances, without changing the whole position of the line, which will otherwise remain complete.

The different expeditions an admiral may be ordered upon, as well as the various circumstances that occur in conducting a fleet, first gave rise to the several lines or orders into which it is formed.

When a fleet engages, it ought to be drawn up in a different form from that in which it sails. A fleet that sails in sight of an enemy must alter its position, from that it would maintain, were there none in view, or none to be expected. When a fleet sails before the wind, it has likewise its particular form of sailing, as it has also when it chases the enemy, makes a retreat, guards a strait or passage, or, is obliged to force through one; or whether at anchor in a road or harbour, or going into either, to insult or attack an enemy. In this variety of circumstances, proper regard must be had to the most advantageous position or form you can range your fleet in, before it enters upon action.

There are three things to be considered before we can judge of the good form or disposition of a fleet, 1. If that form puts it into the best position of executing the admiral's design; such as the most expeditious, as well as most commodious, order of sailing on any enterprize, &c. or if, when obliged to retreat, such disposition secures it best from the attacks or
pursuit





NAVAL EVOLUTIONS.

3

pursuit of an enemy. 2. If that order closes the fleet more or less; because the closer the ships are, the less liable they are to be separated; the several commanders can better aid and assist each other upon any occasion, and have the easier communication with their respective admirals or commanding officers. 3. If from this order the line of battle may be readiest formed; because all orders must tend principally to that, as the only one to engage in to advantage.

REMARK.

The antients ranged their ships or gallies so as to present them in front to their enemy; because the machines they then made use of, were fixed in the heads or prows of their vessels: the same reason now prevails with regard to the gallies, which are drawn up in the form of a crescent or half moon, whose ends or horns are opposed to the enemy; in the middle of which is the admiral; from whence he the more distinctly observes the motions of his fleet throughout. The two fleets being thus drawn up, approach each other to a convenient distance, when the engagement beginning at the ends of the half-moon, extend themselves insensibly, till the whole fleet is engaged, and each partakes of the danger and glory of the action.

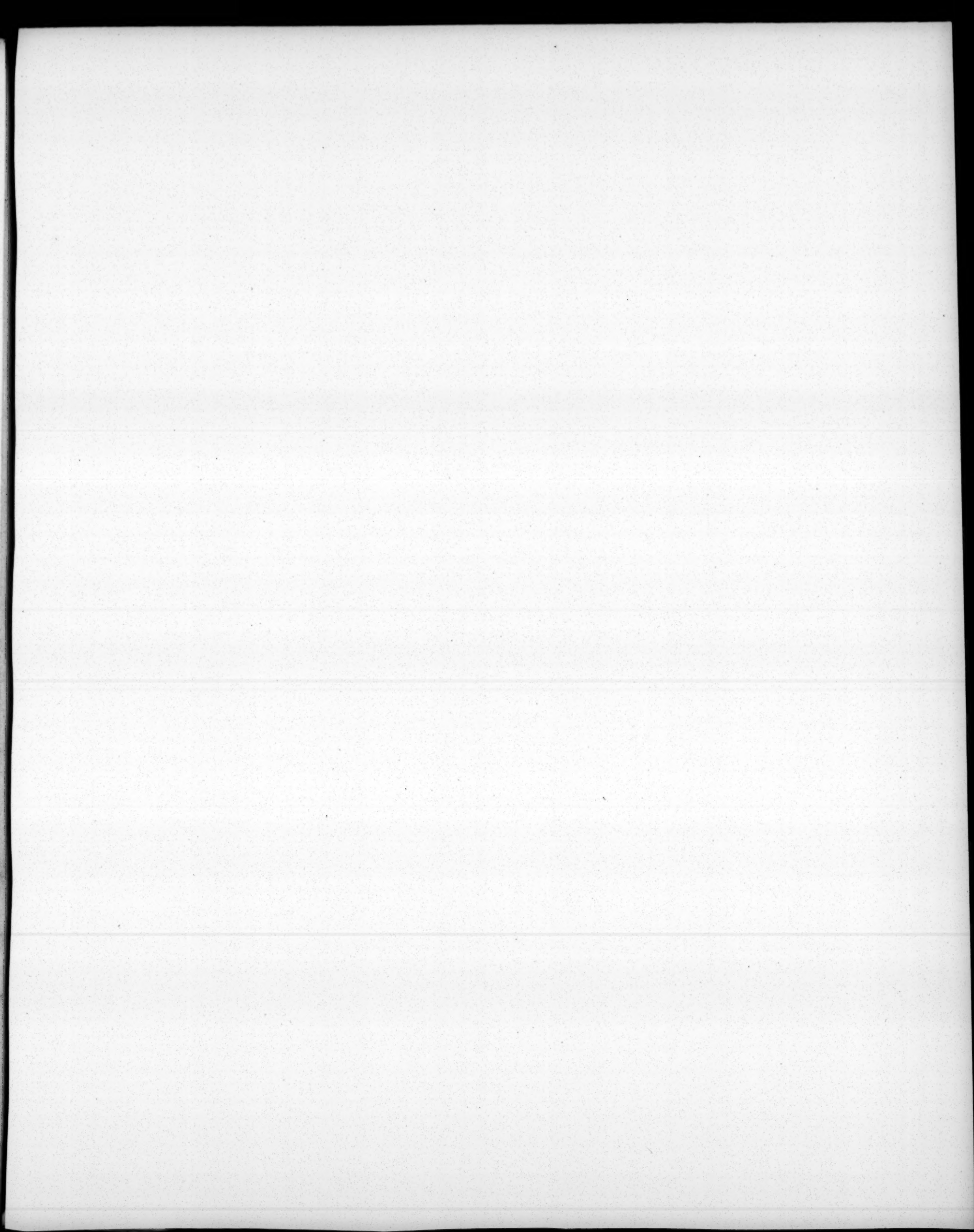
EXAMPLE.

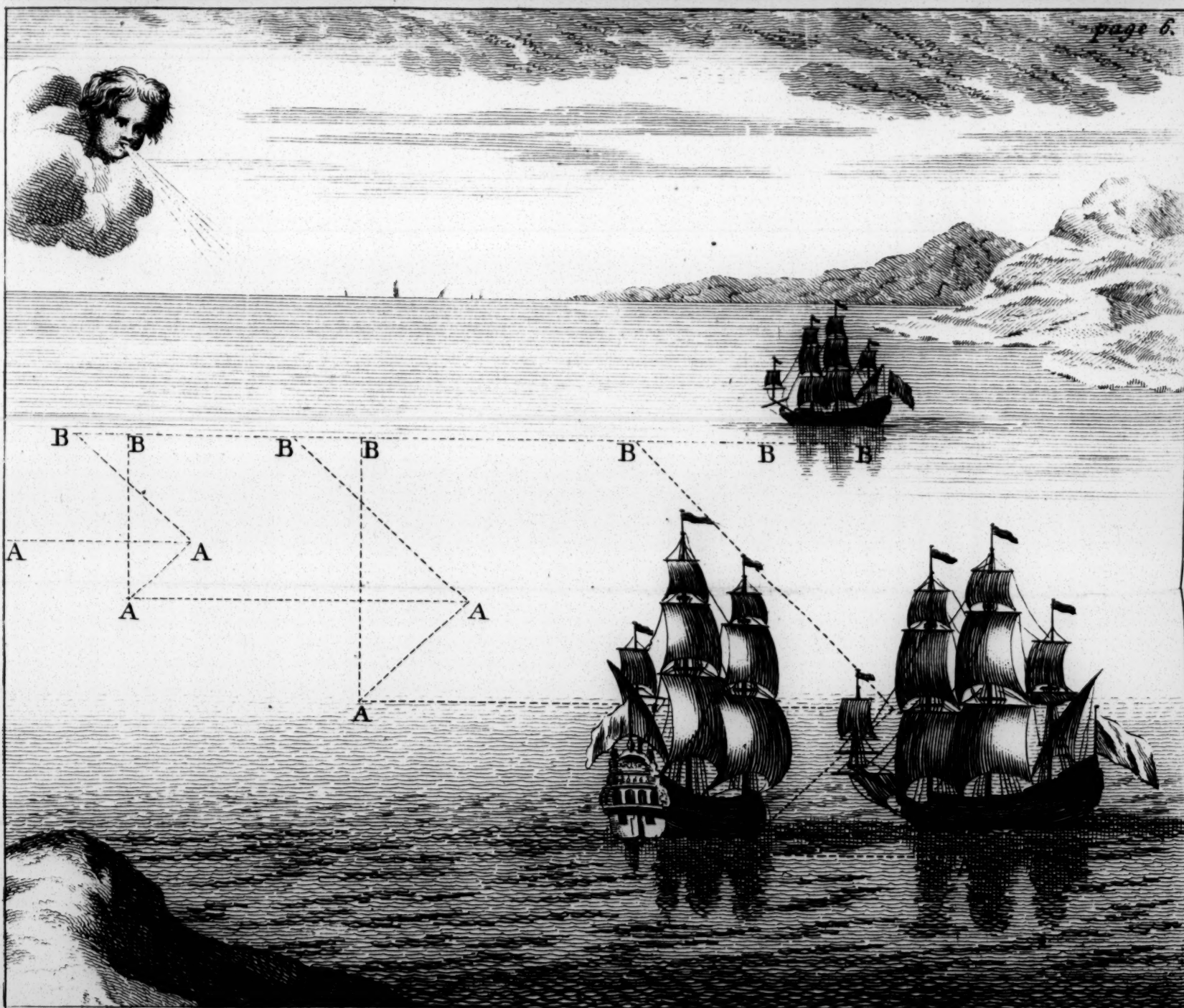
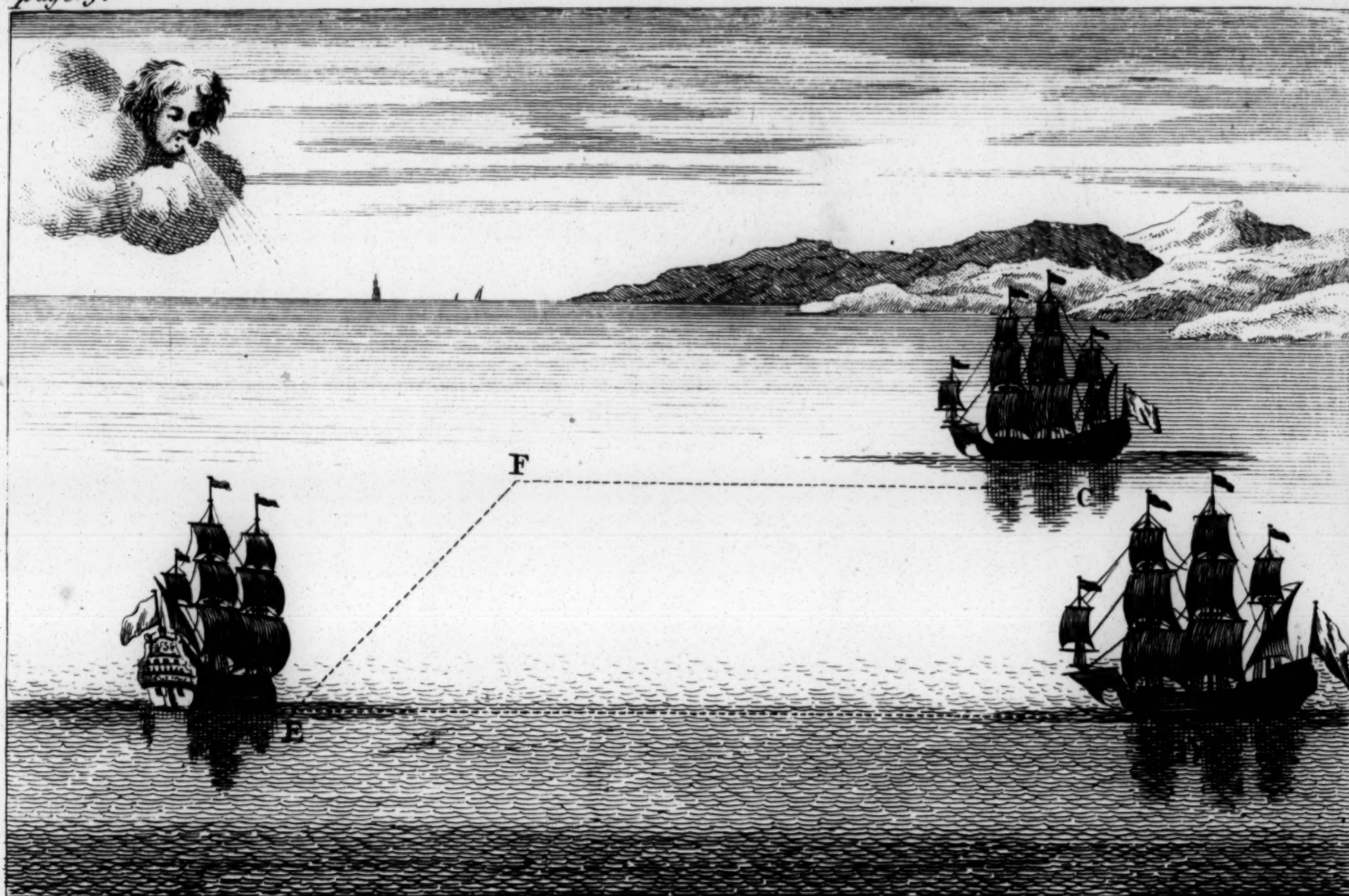
The famous battle of Lepanto is the most remarkable action of this kind that ever happened. It was fought between the Turks and Christians in the gulph of Lepanto, the 7th of October 1571. The Christian fleet of gallies consisted of 205, large and small, the

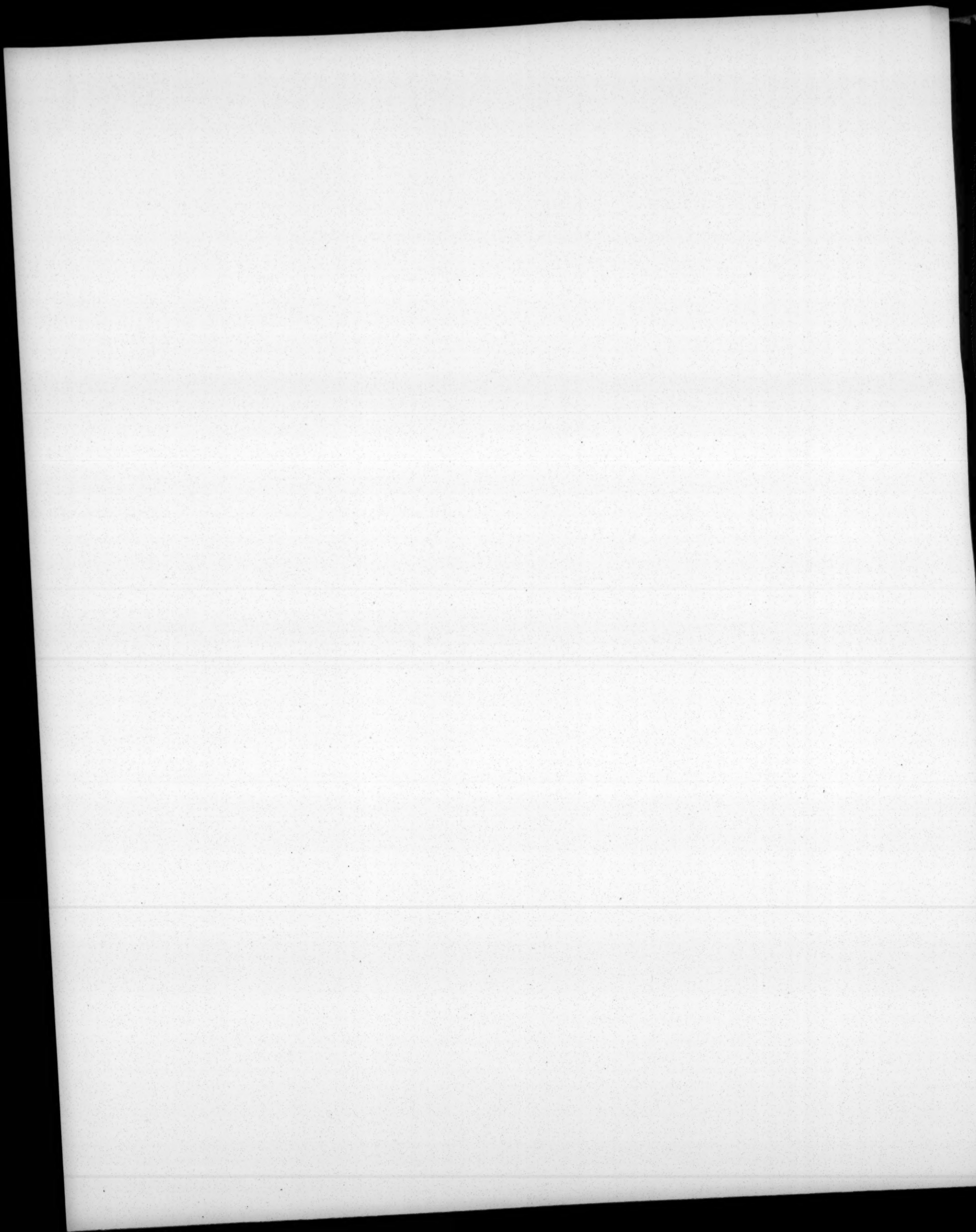
Turks had near 260 ; both formed two long lines, each inclining towards the end, where they began the engagement. Don John of Austria, generalissimo of the Christian forces, had placed himself in the center of his fleet, and gave the command of his right wing (van) to the famous admiral Doria, and his left (rear) to Michael Barbarigo. The bashaw Pertau, general of the Turks, had likewise placed himself, together with the bashaw Ali, in the center of his fleet, and gave the command of his right wing to the bashaws of Alexandria, Mehemet and Siroco, and his left to Uluchiali, governor of Algier. The action began at two o'clock in the afternoon, which was first brought on by rowing towards each other with all their might, accompanied all the time with the most alarming shouts and outcries. The left wing of the Christians performed wonders : Barbarigo attacked the Turks with such incredible fury, that the Barbarians could no longer resist the incessant fire of the Christians, but precipitately ran themselves ashore on the neighbouring coast, some plunging into the sea, others leaving their gallies to the bravery and mercy of the conquerors. The defeat was so general, that the Turks escaped with only 30 gallies. There perished in this day's bloody action 25,000 Turks ; 3500 prisoners were taken, and 130 gallies ; the Christians lost on their side 10,000 men, and 15 gallies : they might have then destroyed the whole Ottoman power, had they known how to have made the greatest advantage of so glorious a victory.

To chace to the greatest advantage.

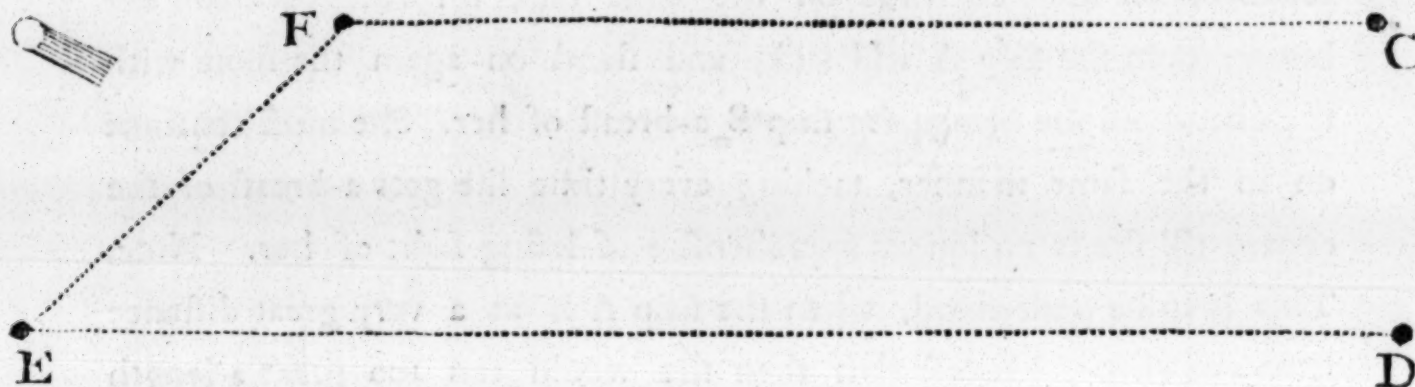
If the ship that chaces is a great way to leeward of the chace, she should continue on the same board till she can tack upon her : that is
to







to say, arriving at the point E, she will find the chace at the point F ; so that the angle F E D will make four points, or 45° .



REMARK I.

The above method is thought to be the best by the most experienced seamen, because by working in this manner you keep nigher the chace, and by making two tacks you will fetch her wake.

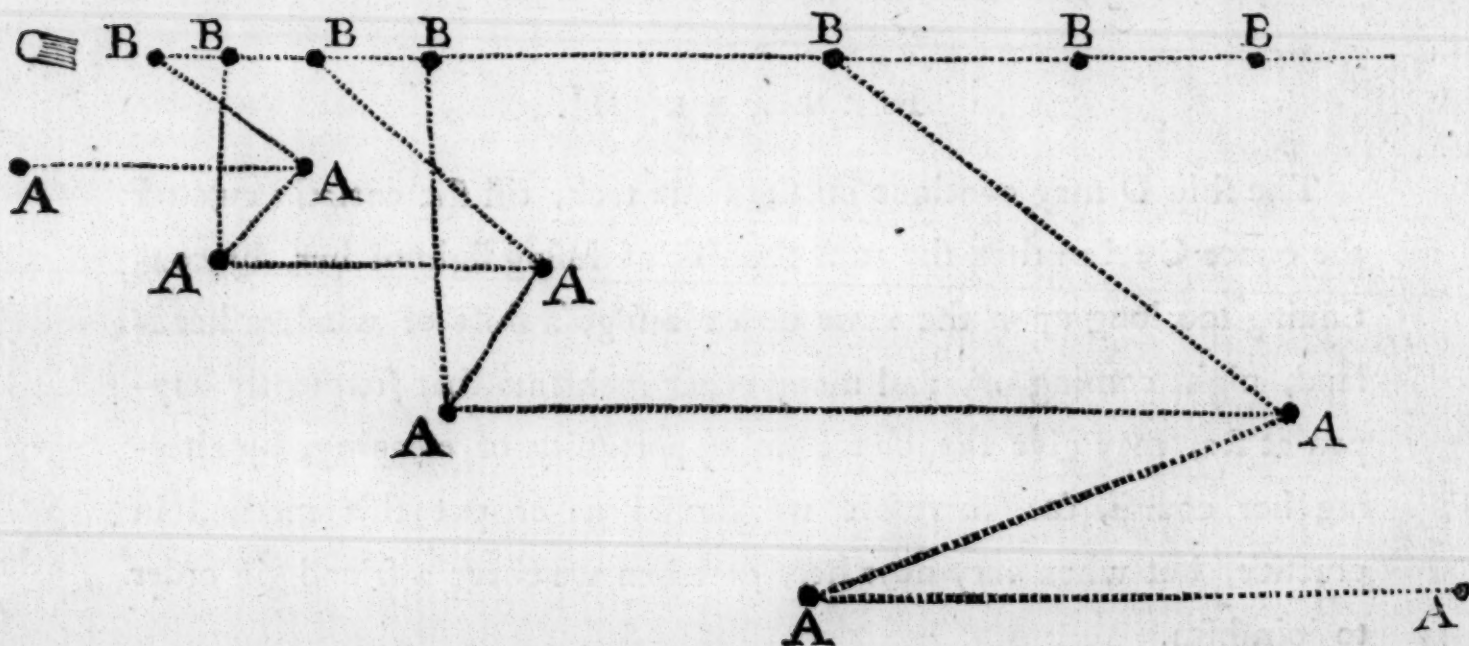
REMARK II.

The ship D may continue on the same tack, till she entirely cuts off the chace C ; but then she runs the risk of losing sight of her, by continuing too long upon the same tack : a fog, a shift of wind, a headland, night coming on, and many other incidents that frequently happen at sea, may give the chace an opportunity of escaping, by altering her course, &c. therefore we should never put this method in practice, but when very near her, or when we chace a friend, in order to join him.

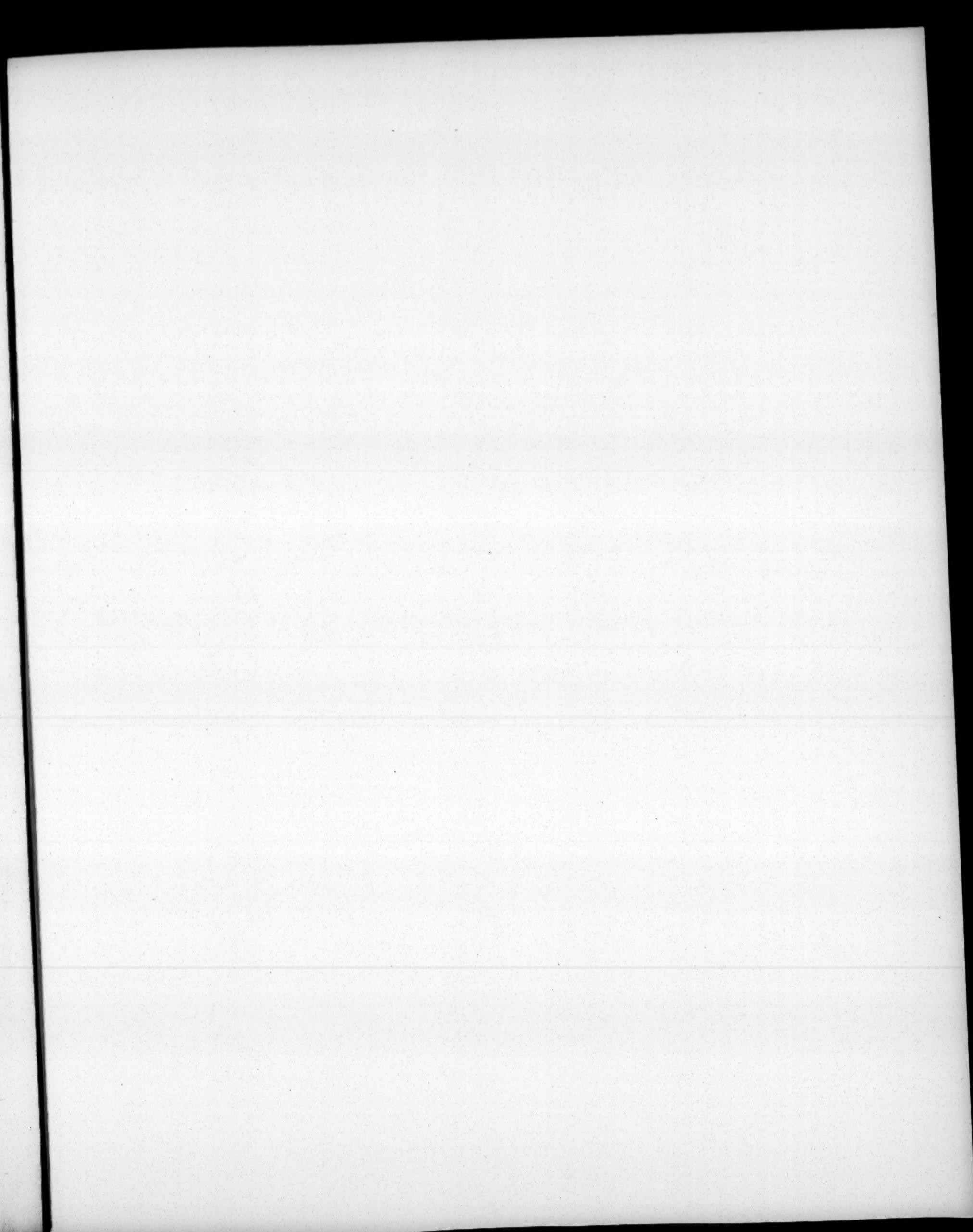
REMARK

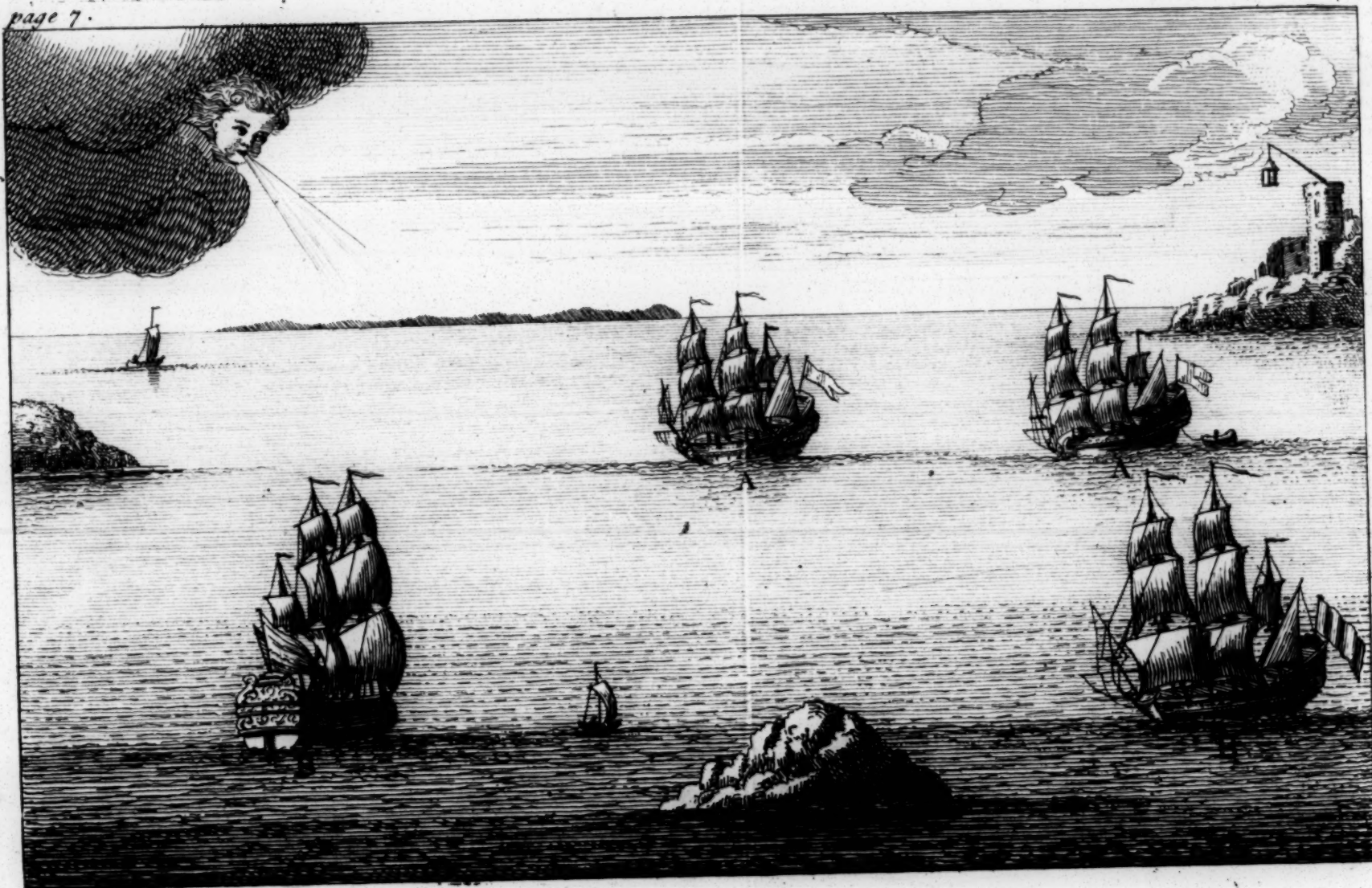
REMARK III.

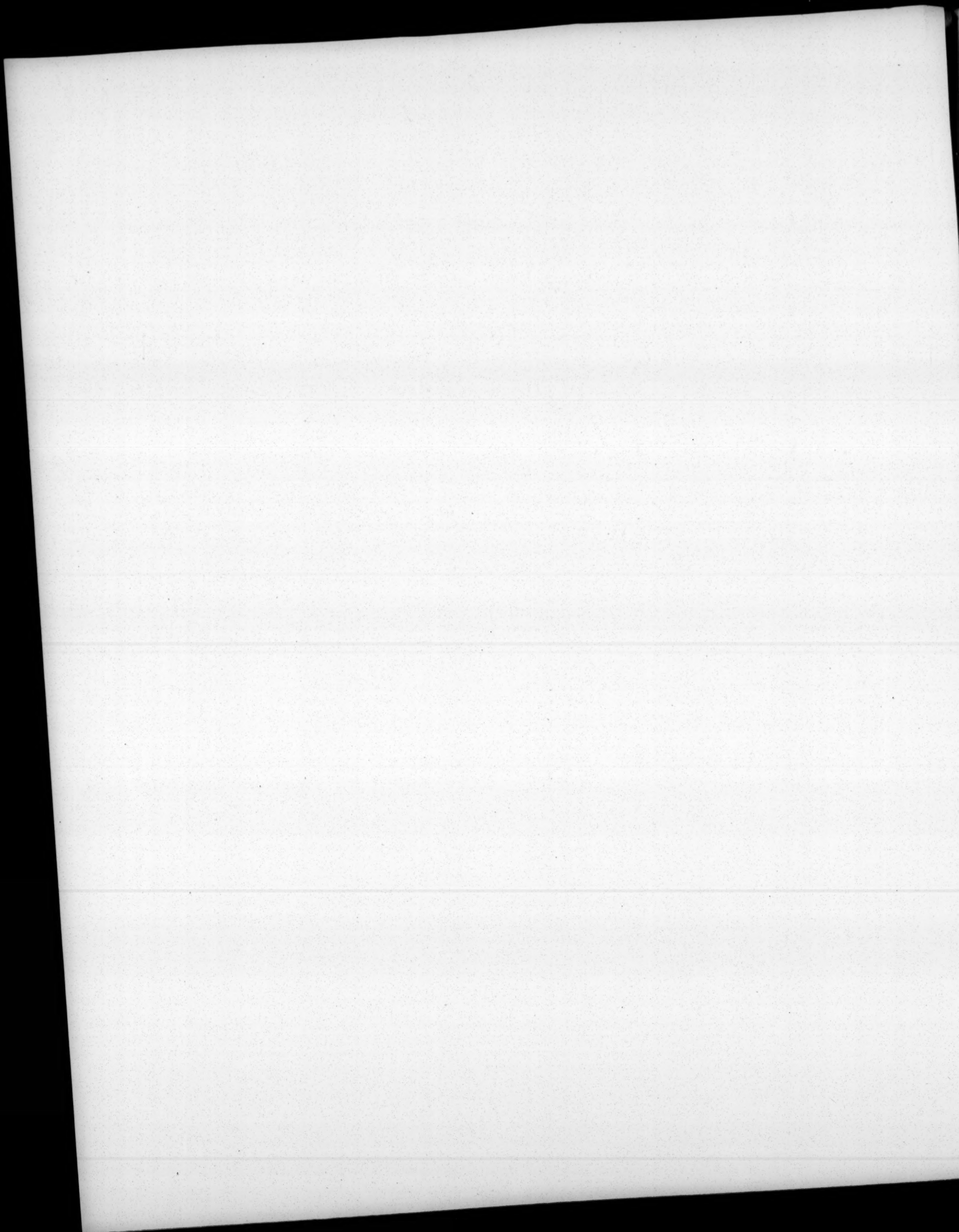
If the ship A chasing the ship B to windward, is at a very great distance, she must continue on the same tack till she gets upon her beam; then the ship A will tack, and stand on again the same with the chase, till she brings the ship B a-breast of her. She must continue on in the same manner, tacking every time she gets a-breast of the chase, till she is no longer apprehensive of losing sight of her. Note, This is to be understood, when the ship A is at a very great distance from the chase, because that then she would run too great a length from her, were she to continue on the same tack, till she could fetch the ship B: but then again, when the ship A is but at a small distance from the ship B, she would lose too much time, if she were to tack always, when she got a-breast of the chase.



N. B. We







N. B. We now practise this method in the navy, when chasing an enemy, as it is found to be mathematically true. It was first put in practice by admiral Barnet in the Mediterranean, upon reading the treatise of L'Hofte.

REMARK IV.

To avoid the chase.

If the ship chased is to  windward, she should keep upon the same tack with the enemy, observing always to tack when she does, to preserve the advantage of the wind as much as possible, as well as to prolong the distance, till a favourable opportunity offers of entirely getting clear of the enemy. If to leeward, she must go more or less from the wind, as may be most advantageous for her.

REMARK V.

We have already observed, that if the ship B is to leeward of the ship A, which she chases, and under no apprehension of losing sight of her; or because she might not be at any great distance from her, or chases her large, in proper settled weather, when the days are long; or that she might be a friend, whom ~~she~~ ^{she} would willingly join: then the ship B ought to continue on the same tack with the ship A, till she can cut her off upon the other tack.

Now we must know how to determine, if the ship B in tacking will fetch the ship A. 1. It is evident that, if the ship B, which is supposed to be a better sailer than the chase A, continues still on the same board till she gets as far to windward as the ship A, she may easily intercept

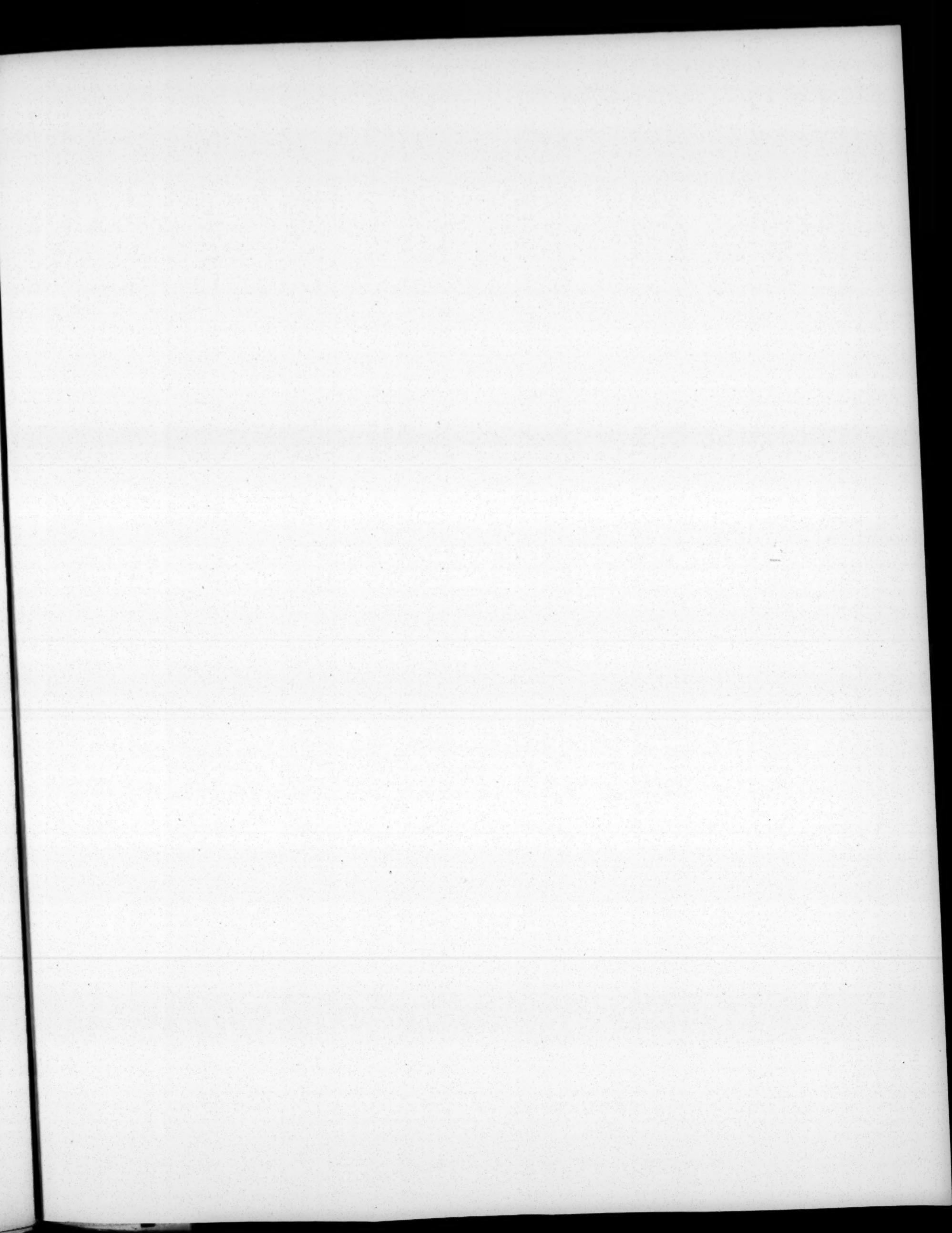
intercept her by tacking upon her : this appears at first sight, as if we should reject this method, because it makes the ship B continue on one tack longer than is necessary : but still I think it should not be entirely rejected, because the ship B may thoroughly make up for her loss of time in continuing on so long a-bord ; for she may then bear down upon the ship A as much as she thinks proper, at the same time obliging her not to alter her course, as I remarked above. 2. The ship B will exactly know when she ought to tack upon the chace A, if she calculates the time from her being a-breast of her, till she thinks proper to tack upon her again : for continuing on, the same length of time, she may be certain she cannot fail of intercepting her.

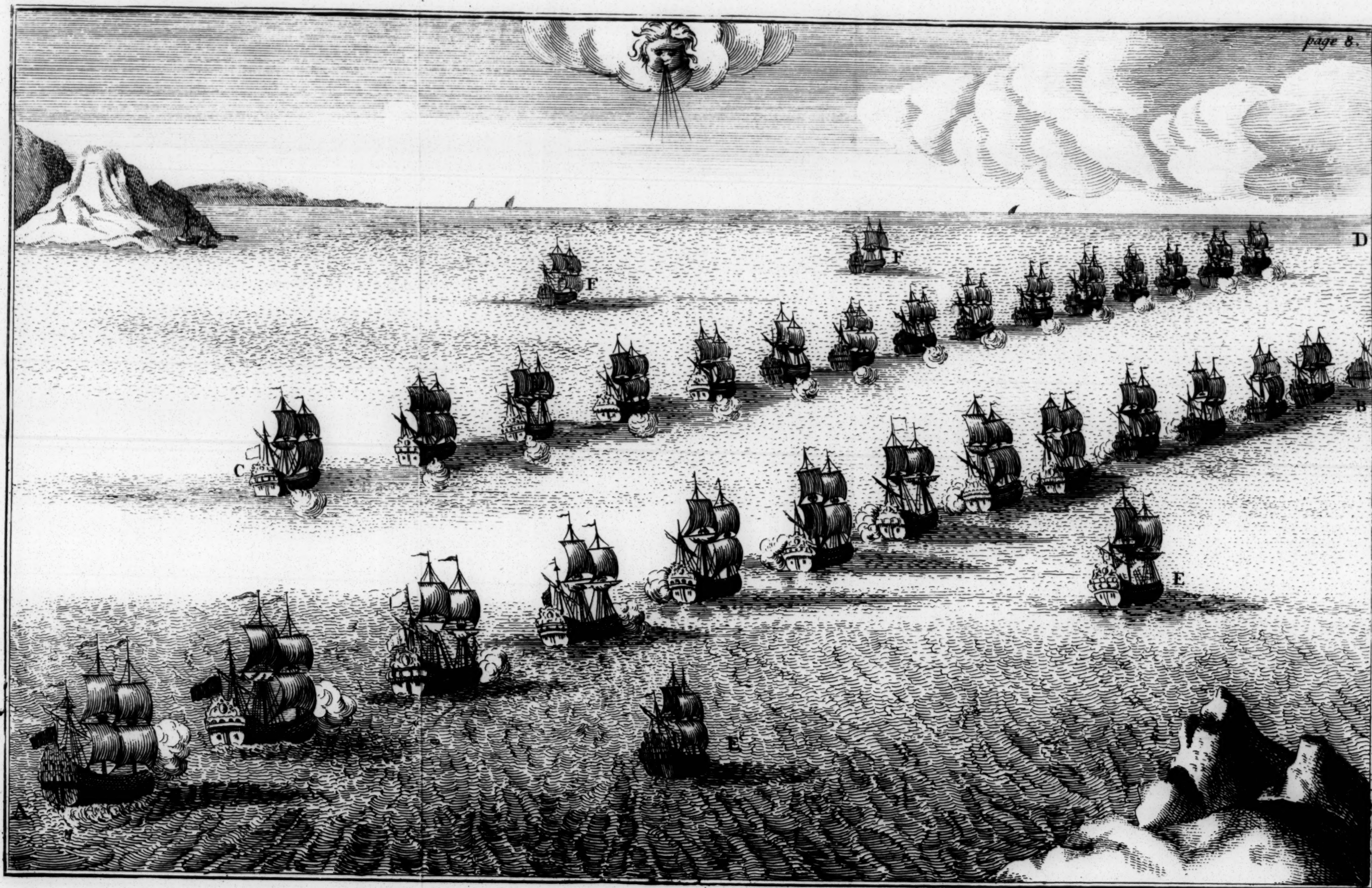
Of the line of battle.

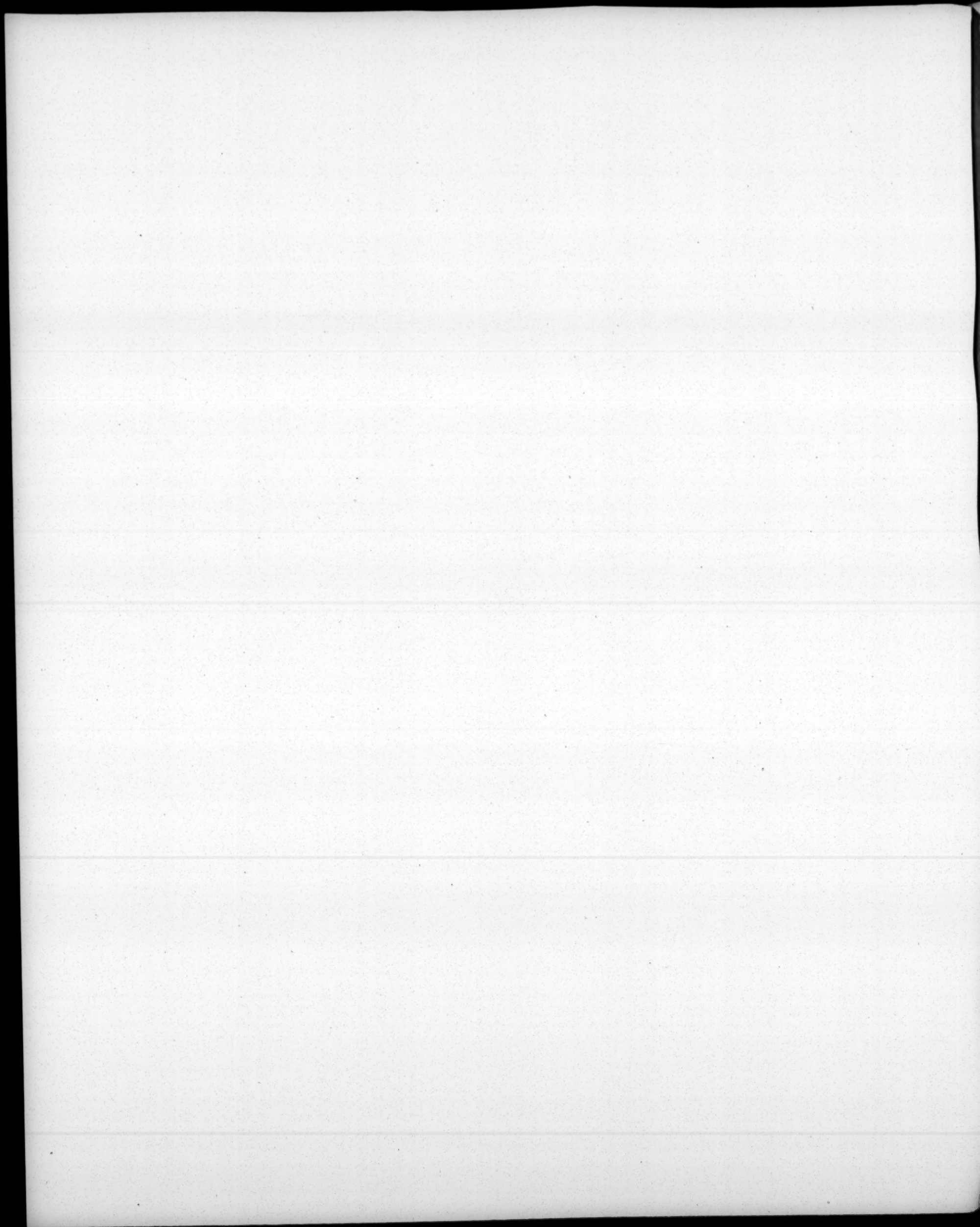
In a sea-engagement, the fleets are drawn up in a line of battle on two parallel lines upon a wind. The ships keep close to the wind on the line they are formed in, and are commonly at a cable's length distant one from the other, the fire-ships, transports, tenders, &c. keeping at half a league's distance on the opposite side of the enemy. Thus—the fleets AB, CD, that are engaged, are ranged under an easy sail with their larboard tacks on board ; and the fire-ships EE, of the fleet AB are to ^{Seward} ~~windward~~, the fire-ships FF are to ^{ward} ~~down~~ of their fleet CD.

EXAMPLE.

This form was observed, for the first time, in the famous battle of the Texel, where the duke of York defeated the Dutch on the 13th of June 1665.







We owe the entire perfection of this order to his royal highness. The English fleet consisted of 100 ships of the line; that of Holland was more numerous, though not in three deck ships: the two fleets found themselves nigh each other early in the morning, the wind being at S. W. they ranging themselves in two lines at S. S. E. each extending itself about five leagues in length, the English having the advantage of the wind. The duke of York, commander in chief of the English fleet, had placed himself in the center, and gave the command of the van-guard to prince Rupert, and the rear to my lord Sandwich. The Dutch admiral Opdam had opposed himself in the center of his fleet to the duke of York, and vice-admiral Tromp against prince Rupert. They cannonaded each other from 3 o'clock in the morning 'till 11, with great fury and intrepidity, the victory still declaring for neither side. The Dutch took one English ship, which too rashly attempted to force through their line: but they falling off to S. E. found the English fire greatly annoyed them. About 11 o'clock, the duke of York bore down with his whole line upon the enemy, he himself bearing down at the same time upon Opdam; this disposition and resolution of his royal highness elevated the courage and spirit of both parties to an almost invincible obstinacy; the terrible roaring of the cannon, wrecks of ships, fall of masts, together with a thick smoak intermixed with flashes of fire from the ships that blew up, heightened the horror of this action beyond the power of imagination. It is related of admiral Opdam, that, amidst all this scene of carnage and destruction, he sat with the greatest composure on his poop, viewing, and giving orders to repair as much as possible, the damage and disorder he sustained from the duke of York; animating his men all the

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time

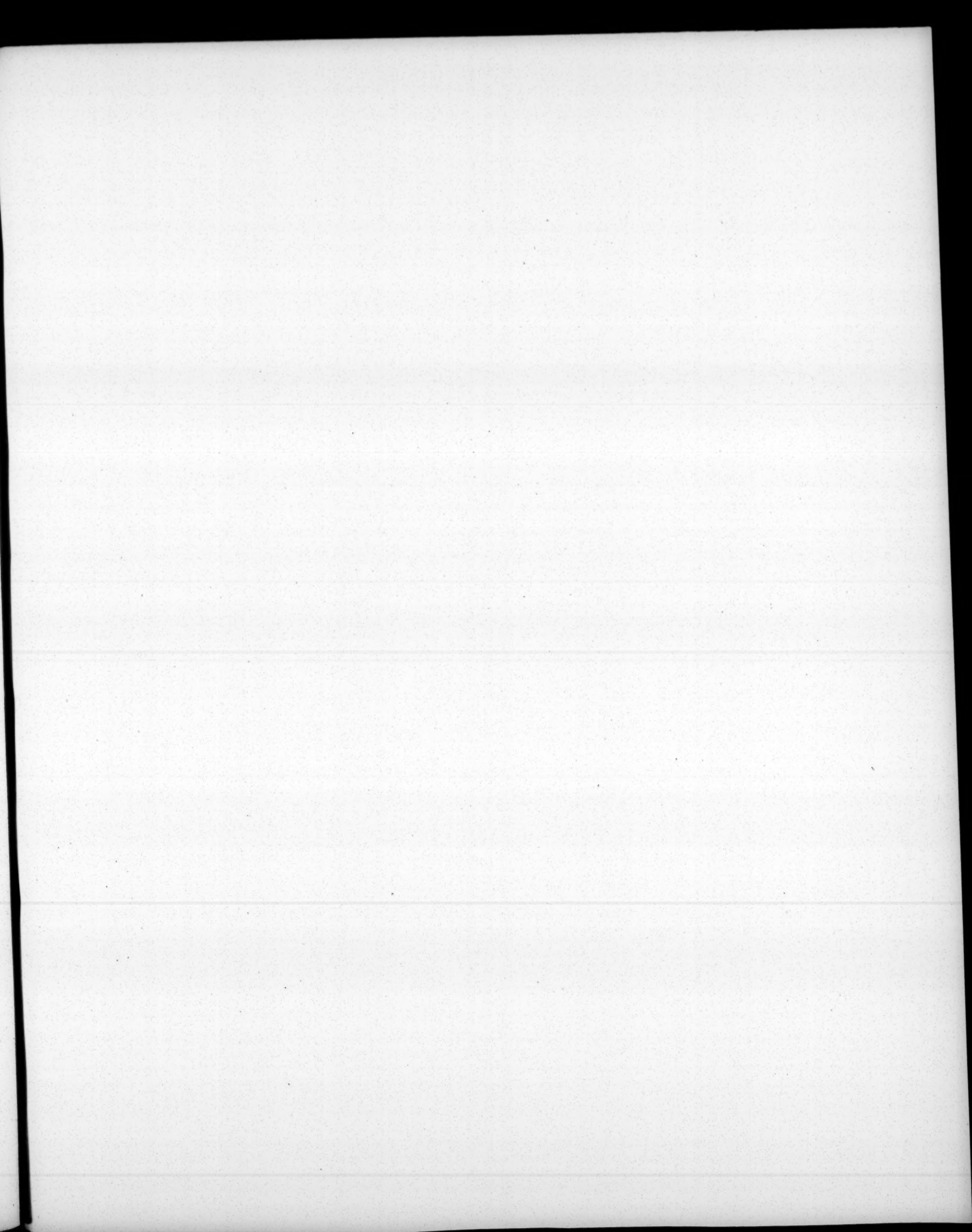
time both by his words and actions. At 2 o'clock in the afternoon, his royal highness made the signal for the whole line to bear down together upon the enemy, which obliged the Dutch to alter their disposition of keeping close to the wind any longer. Opdam only with one of his ships, called the prince of Orange, of three decks, still kept his station; but soon after, Opdam having received a whole broadside from the duke of York, his ship blew up, without its being ever known by what accident, though five of the men were saved. The Dutch, having already lost many of their ships, and seeing their admiral blow up, put before the wind for the Texel; the duke of York pursuing them with great resolution and bravery to the very entrance of their port: he took, burnt, and destroyed 22 ships of the line, 20 of which were from 50 to 80 guns: and gained over them the most glorious victory that was ever obtained at sea. The whole action cost him but one man of war, with the loss of 3 or 400 men.

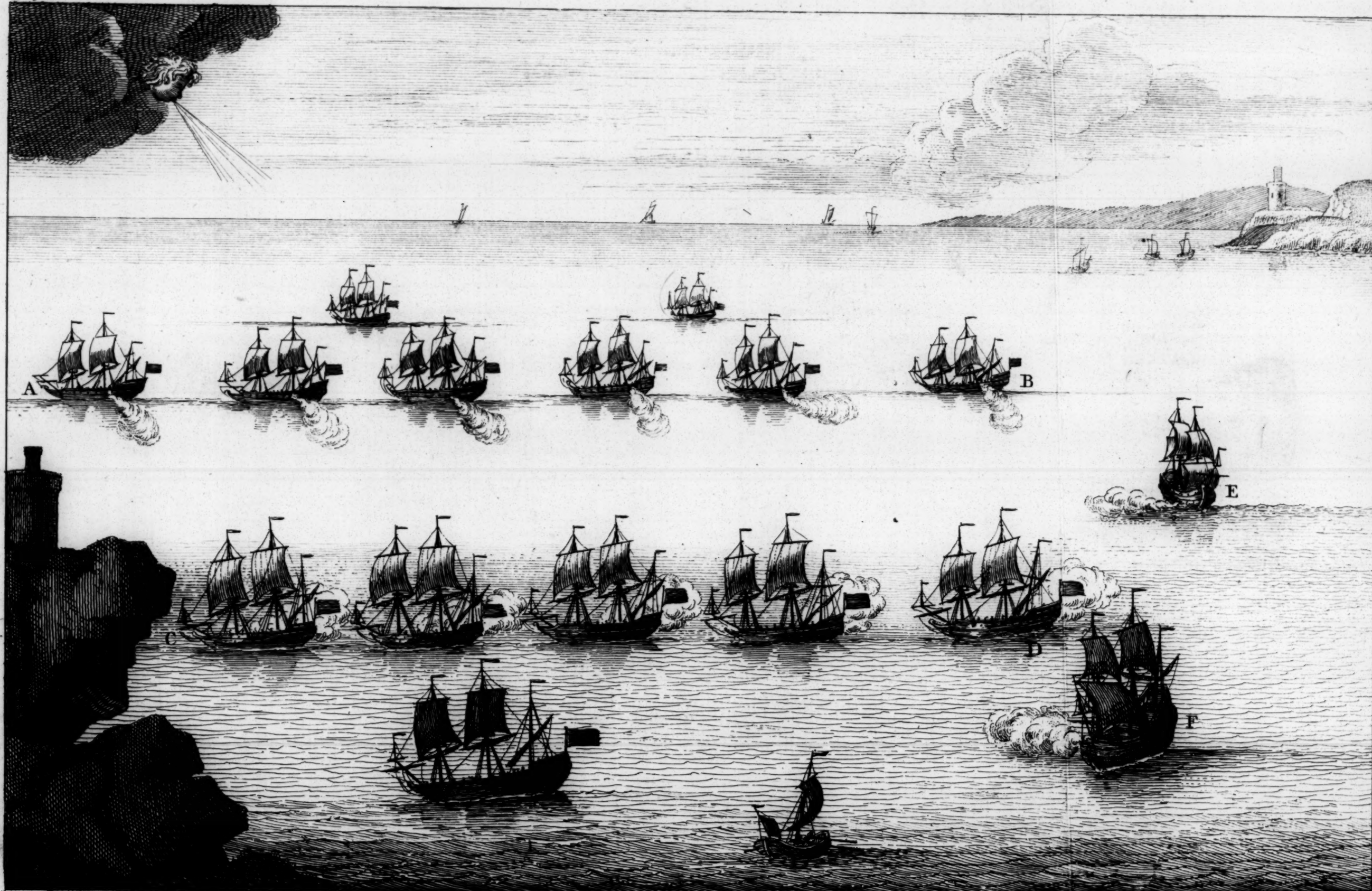
When a fleet is ranged in a line, some important reasons may oblige the admiral to change the disposition of his squadrons or divisions; that is to say, to make the van-guard, the rear, or the center, &c. nevertheless I must own this is not the most essential part of naval evolutions: however, it is sometimes necessary.

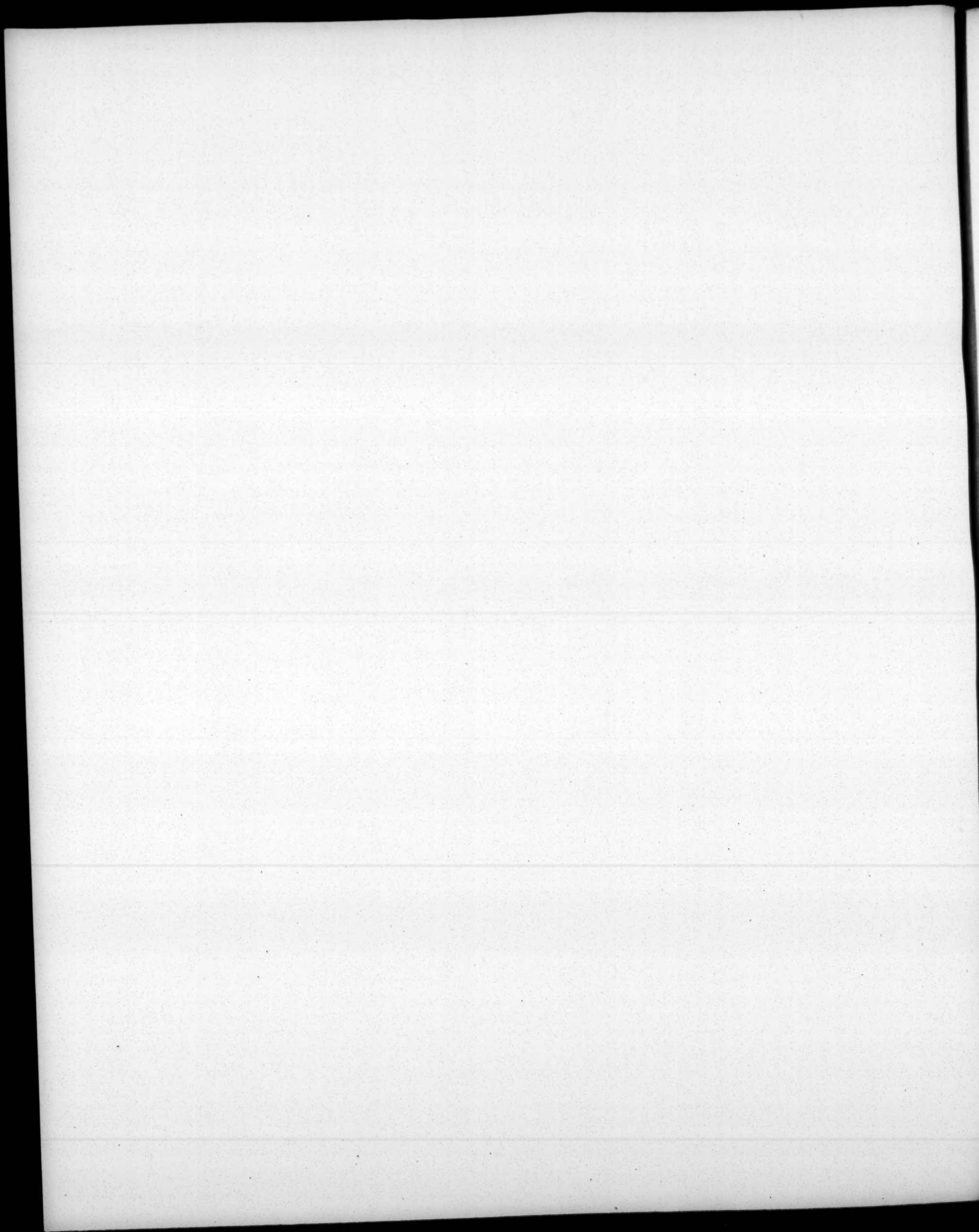
REMARK I.

Before we enter into action, or form the line of battle, we must consider first the advantages or disadvantages of being to windward, or to leeward.

Advantage







Advantage of being to Windward.

I.

The fleet to windward can edge down to the enemy, when, and as near as it shall think convenient : consequently regulates the time and distance most advantageous to come to action.

II.

If the fleet to windward is more in number, it may easily detach some ships to send after the rear of the enemy, which must undoubtedly throw them into confusion. Thus, the fleet AB being more in number than the fleet CD, may easily detach the ships EF, to double upon the rear D, which cannot long resist such superior fire, therefore must give them an opportunity, (with the rest of the ships that will of course join them) to range along the whole length of the enemy's line. This is an advantage the fleet to leeward cannot have, let it be ever so numerous ; for the rear of its line will be in a manner useless.

EXAMPLE.

The advantage of the wind could never be more favourable, than it was in an action off Augusta, the 22d of April, 1676, when the combined fleets of Spain and Holland avoided a total defeat, by having the advantage of the wind. The French fleet, commanded by Mons. Du Quesne, consisted of 27 ships of the line. The marquis of Almira lieutenant-general, commanded the van-guard, and Mons. Gabaret, chef d'escadre (commodore) the rear. The enemy's fleet consisted of about the same number of ships, but had besides 9 gallies ; De Ruyter

commanded the van-guard, the Spanish admiral was in the center, and the Dutch vice-admiral commanded the rear. The two fleets met off Augusta early in the morning; but the enemy kept their wind 'till 4 o'clock in the afternoon, when de Ruyter bore down upon the French rear in good order, where they received him in the same manner with equal intrepidity: there were many ships disabled on both sides. The marquis d'Almira was carried off by a cannon ball, and de Ruyter was mortally wounded; these two accidents caused some disorder in the van of each fleet; but the chevalier de Vallballe, chef d'escadre, supplying the place of the marquis d'Almira, behaved so remarkably gallant, that he was just upon the point of taking or destroying a part of the enemy's fleet, had not their gallies most opportunely taken their disabled ships in tow, and saved them from falling into his hands. The action began later in the center, and had scarcely reached the rear-guard: the enemy having the wind had availed themselves so well of that advantage, that they continued the engagement no longer than was necessary to save their honour; waiting for the approaching night to retire from the pursuit of the victors.

III.

If any of the ships of the fleet to leeward should be disabled, whether in the van or rear, or even in the center, the fleet to windward may with the greater ease send down their fire-ships upon them, or send a detachment after any part of the flying enemy.

IV.

We must likewise attribute, amidst other advantages of being to windward, that of being sooner freed from the inconvenience of the
smoak

smoke of the enemy, as well as of our own. 1. The wind repelling back again the smoke of the cannon into the ship, so greatly incommodes those quartered at the guns, as totally to deprive them, for some time, of the sight of the enemy. 2. The same smoke must likewise much embarrass the sailors in working the ship, as it is often found by experience, that the sails and rigging are set on fire by the combustible matter and fiery particles incorporated with the smoke; besides many other fatal accidents incident to ships in that unhappy situation.

Advantages of being to leeward.

REMARK II.

It must be acknowledged that a fleet to leeward has likewise great advantages; and there are who maintain, that the advantage of being to leeward is at least equal to that of being to windward; but, I think, when they consider all circumstances more attentively, they will find the advantage of being to windward the greatest a fleet can possibly have, whether superior or inferior to the enemy: though we must allow at the same time, that, on some extraordinary occasions, it may be more adviseable to get to leeward if we can, that is, when it blows hard, and the sea runs so high, that the weather fleet cannot open its lower tier, when obliged to engage a greater number of ships, or in an action between two single ships. But still I am of opinion, that in an engagement between two fleets, in moderate, proper weather for engaging, that which has the weather-gage has greatly the advantage.

I.

The fleet to leeward fire to windward, and, consequently, the ships may make use of their lower tier, without being under any apprehensions, that a sudden squall of wind should overpower them, by the water rushing in irresistably between decks : an advantage (in some measure) the English fleet, under Sir Edward Hawke, had over the French fleet, commanded by Mons. Conflans, in that ever glorious and memorable action off Belleisle, the 20th of November, 1759, where they fatally experienced the difference of our superior skill, undaunted resolution, and seamanship. This circumstance is certainly the greatest advantage a fleet to leeward can have, especially when it blows hard, with a great sea. One can hardly conceive the confusion and disorder sudden gusts of wind occasion ^{Amongst} ~~between~~ the men between decks, when the waves come pouring in, and lay a ship upon her broad-side, so as often to endanger her oversetting, or going to the bottom before the ports can be secured.

II.

The fleet to leeward can easier cover any of their ships, that should be disabled in action, which must greatly embarrass the fleet to windward to effect, without running the risk of being destroyed by the enemy in attempting it ; however, these are disasters that both are equally subject to.

III.

The fleet to leeward may easier make a retreat if beaten, whereas the fleet to windward cannot so well escape, without being reduced to the necessity of forcing its way through the enemy's line, which must be attended with the most fatal consequences.

REMARK.

I am very well convinced that a fleet, which puts before the wind, runs a great risque, if the enemy is in a condition to pursue it; but then there are some circumstances, wherein the fleet to leeward may boldly venture to crowd away before the wind; that is to say, when night approaches, the wind freshens, the sea rises, or the enemy is embarrassed with a convoy, which may prevent their pursuing them.

EXAMPLE.

The allies availed themselves of these advantages, in the year 1689, off Bantry. The count de Chateau-renaud commanded the French fleet of 24 ships of the line, and convoyed 3000 men to Ireland, with a great quantity of stores, provisions, and ammunition. My lord Herbert, who commanded a squadron of much the same force, having intelligence that the French landed their troops in Bantry-bay, resolved to go and attack them there, not doubting but he should find them in some disorder: but the count had taken his measures so prudently, and was so well prepared, that he advanced in good order to receive the English, and attacked them with so much bravery, that he soon obliged them to crowd away all the sail they could make before the wind; pursuing them till night put an end to the chase: and the count, having thus happily landed his troops, returned to Brest, where he received the just applauses due to his successful expedition: having in eleven days carried succours into Ireland, beat the enemy, took a considerable convoy, and reconducted back again his fleet to Brest in good order and condition.

A more

A more particular explanation of the line of battle.

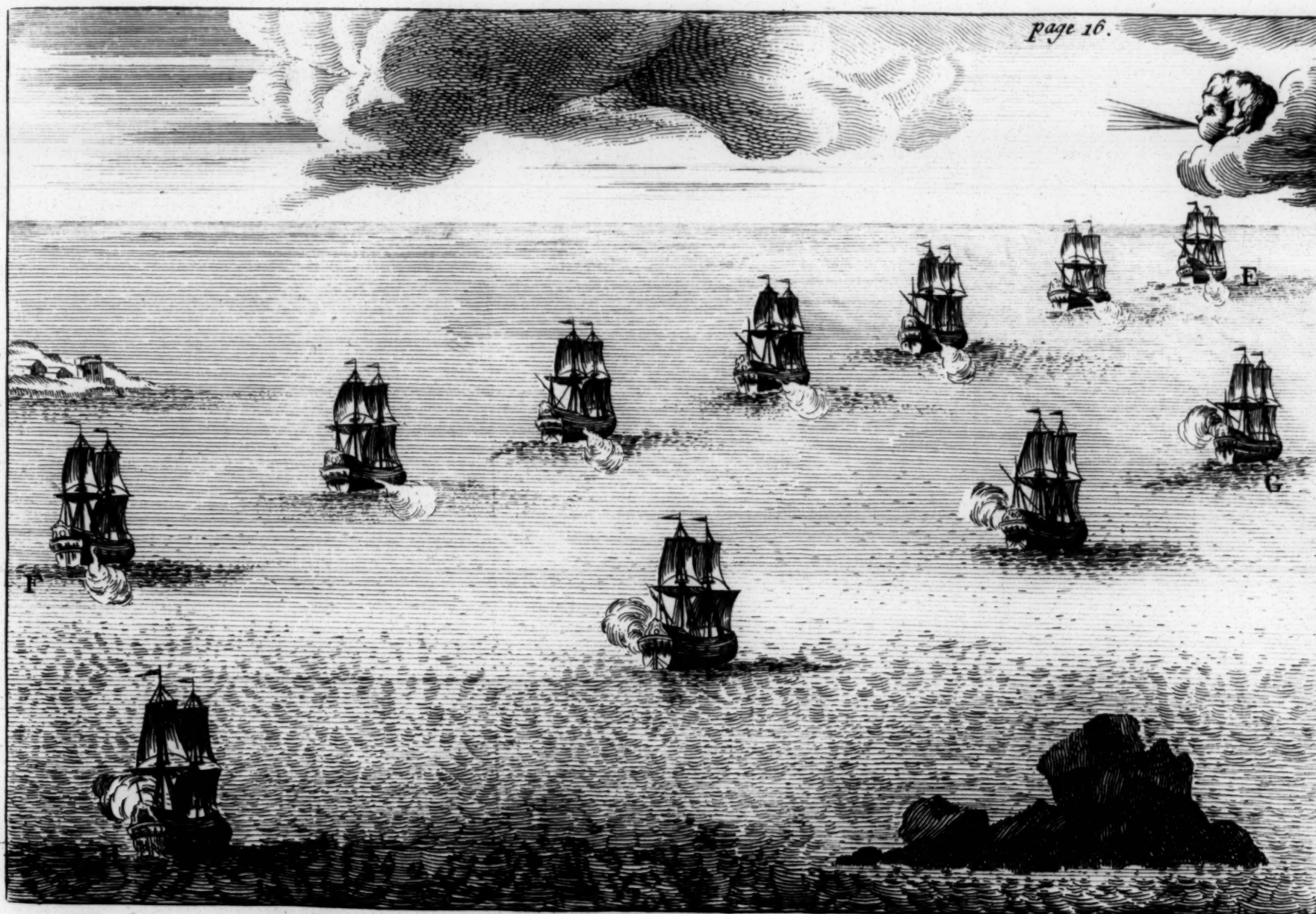
We have already observed, that fleets in action ought to be ranged on two parallel lines ; for, if formed otherwise, by inclining in the van and rear, the headmost and sternmost ships will be engaged, whilst the ships in the center will be out of the reach of each others guns : a consequence too obvious to need any demonstration.

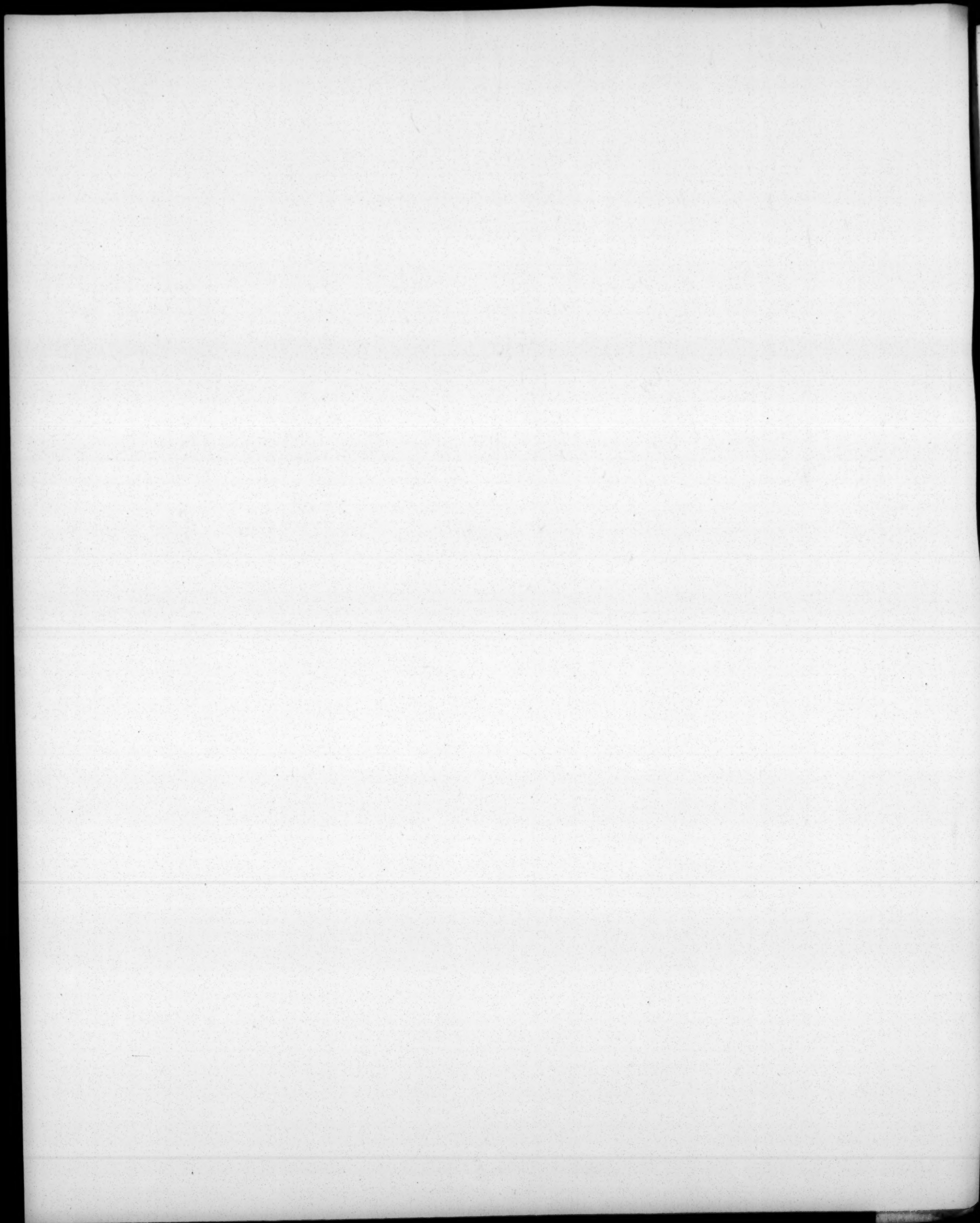
The ships ought to keep at a cable's length from each other, or closer, if judged convenient or necessary : otherwise, if too far asunder, one ship of such line will be exposed to the fire of two ships at a time, from the closer and more regular line of the enemy ; as may be seen by the two lines GH and FE.

REMARK.

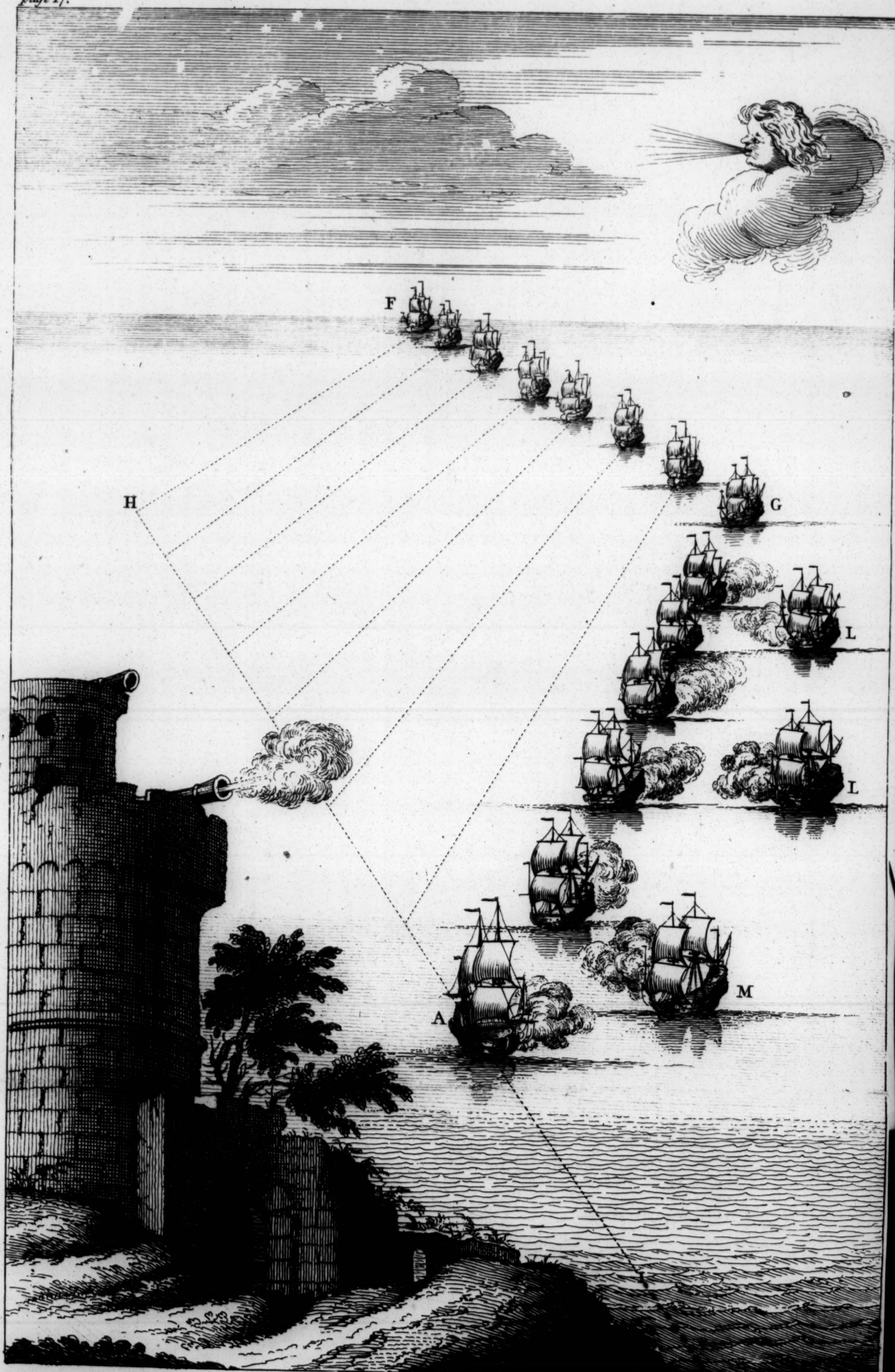
The size of the ships is likewise too important a point not to be properly considered in a line of battle, as it contributes more to its strength than the number of the fleet, for two reasons. 1. A large ship carries more guns, and heavier metal ; so that a fleet consisting of such ships is of greater force, than a more numerous fleet of smaller ships, though drawn up in a closer line ; because they engage the enemy with more, as well as heavier artillery, in the same space. 2. The great ships are stronger timbered, and consequently better able to resist the shot of the enemy ; therefore of greater service in action, than a fleet of smaller ships, notwithstanding the advantage of a closer line ; because that each ship of the former is attacked only by a less number of guns of the latter, that can do her any damage.

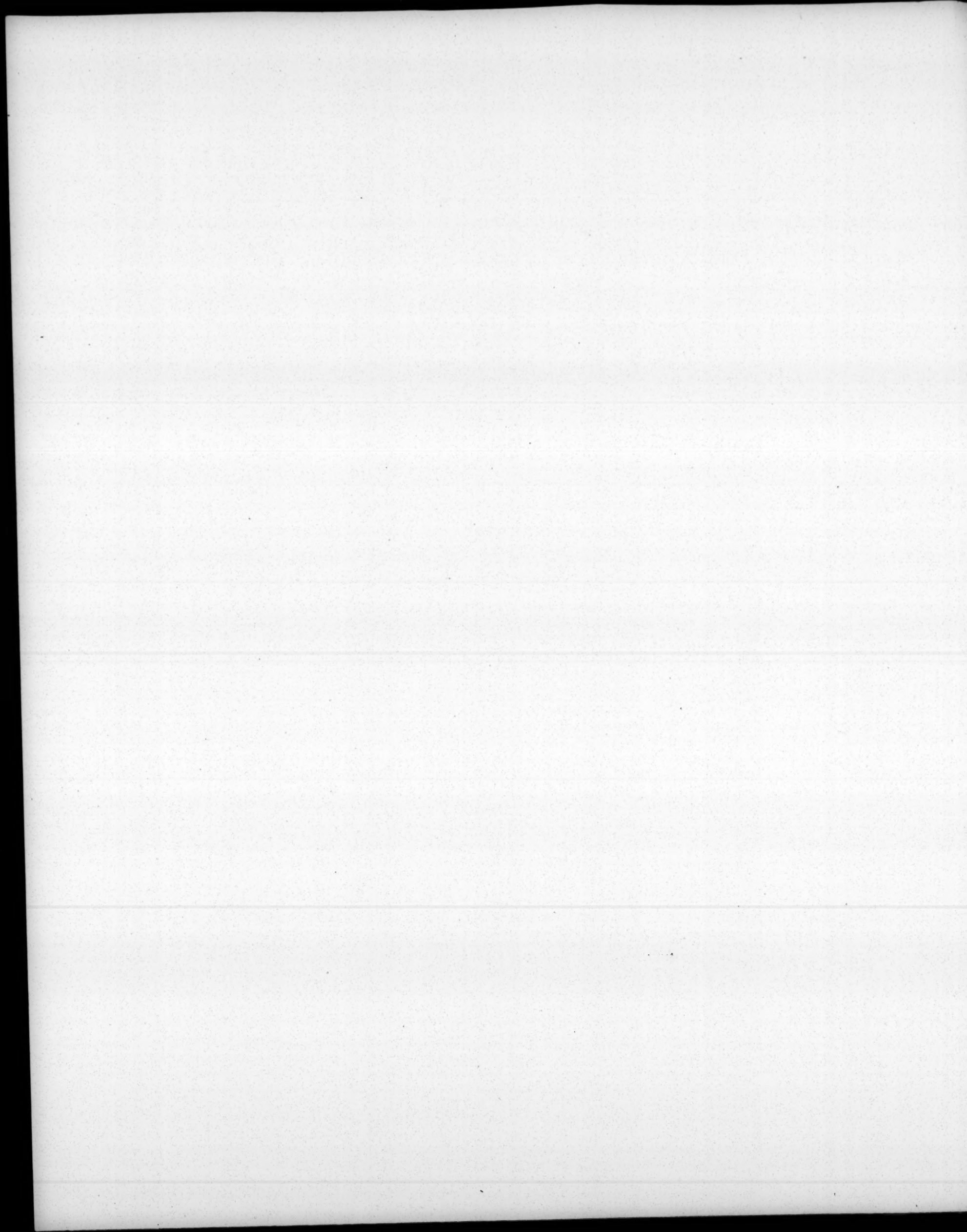
To











To form a line of battle from the order of retreat.

I.

Suppose the fleet AGF in a retreating form, to change it into a line of battle ; the headmost ship A must haul up upon a wind, and the rest of the fleet running large four points on the same tack, will form itself in her wake, on the Line IH.

REMARK I.

This evolution is so regular, so simple, and short, that it makes this order of retreat preferable to any other ; for a fleet that retreats may be often obliged to come to action : it would be then greatly embarrassed, if it could not immediately resume the line again by so easy and regular a method as this. In effect, by way of illustration, let us suppose, that the enemy L L M press the fleet so close in its pursuit, as to force it to come to an engagement ; then the ships that were sailing large, haul upon a wind all together, as soon as possible, on the larboard tack, the head A hauling up at the same time. This manœuvre (method of working) can cause no confusion in the fleet : on the contrary, it then presents its sides with greater advantage to the enemy ; and the ships that range themselves upon a wind in the wake of the ship A, will force between two fires the enemy's ships M.

REMARK II.

We suppose that the enemy attack only one side, for they will find it difficult in effect to attack both, without running the risk at the same time of being separated : but admit that the enemy did attack on both

D

sides,

sides, you may still perform the evolution equally the same; and the ships GF would present their sides to the enemy, as well as when they were sailing large or before the wind.

The sailing form of a fleet.

This sailing order of a fleet is judged the best, and that which is put in practice upon most occasions, whether upon expeditions, looking out for an enemy, &c. It consists in dividing the fleet into three columns, AB, CD, EF, or parallel lines, either upon a wind or large, as the admiral may think most expedient: thus will the course and distance of the columns, as well as each ship's station, be determined and regulated; observing at the same time, that they keep a-breast of each other, as near as possible.

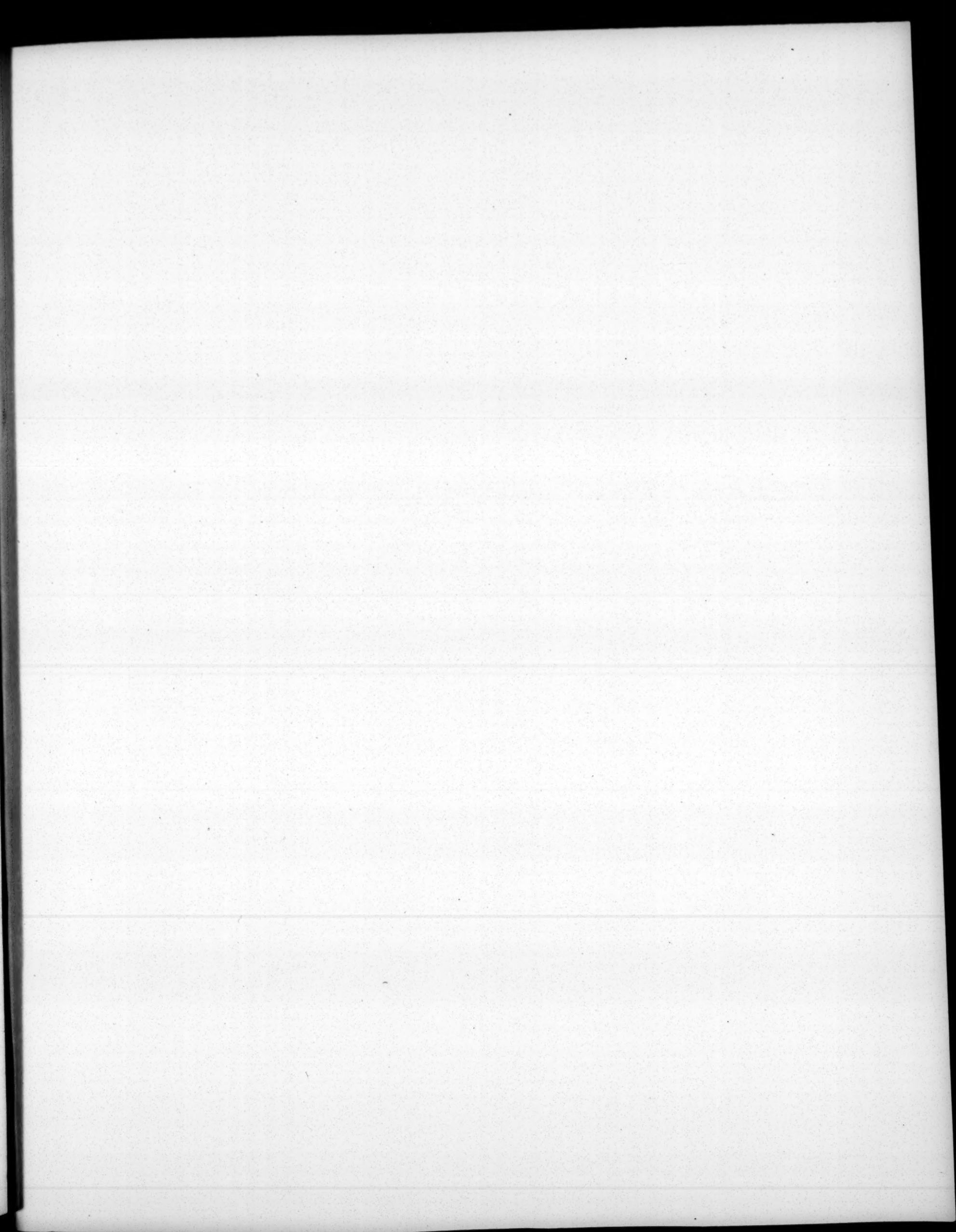
REMARK I.

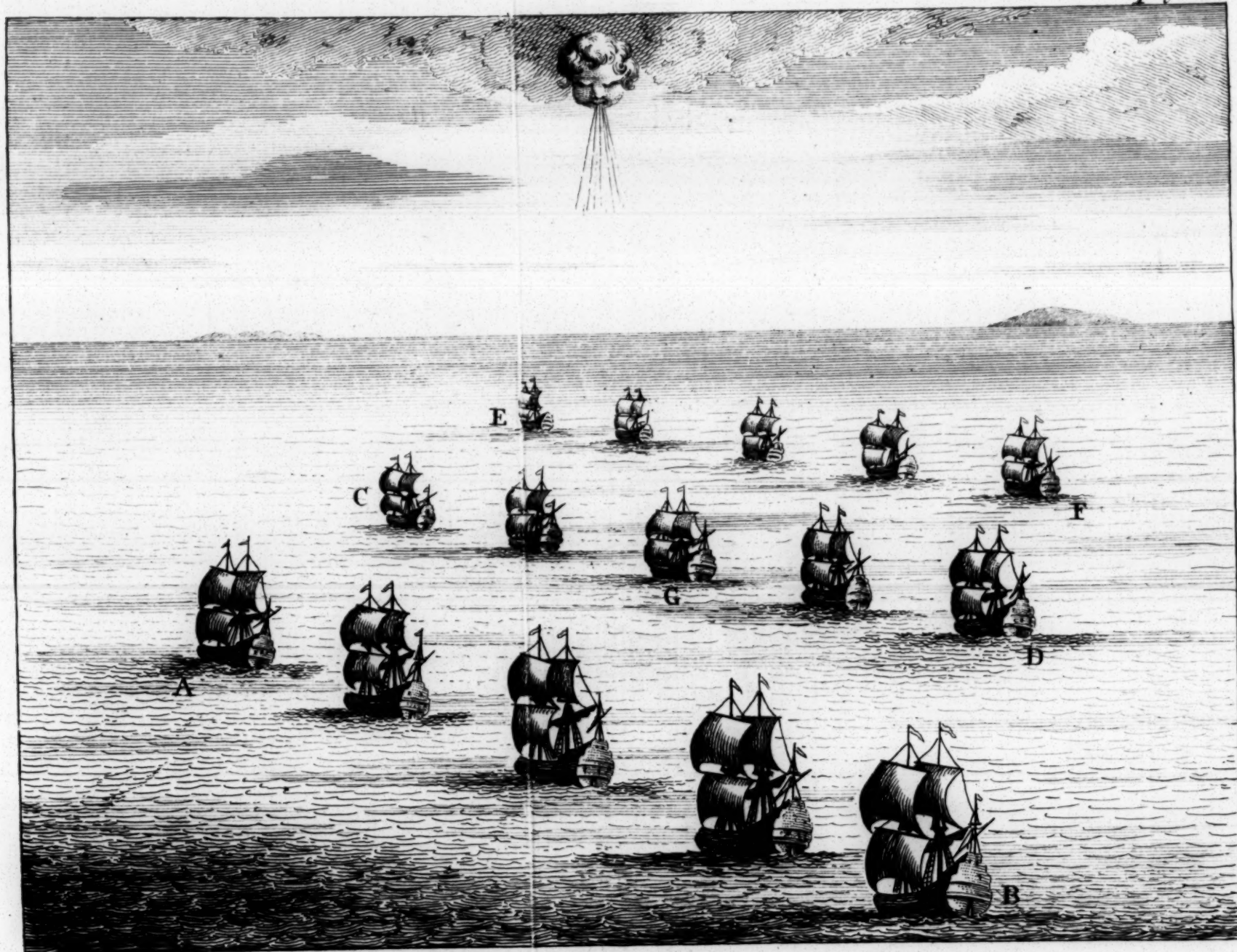
An evolution, to be perfect, should be so uniform, that two or three ships might direct all the rest, and should put them under the necessity of doing what is required.

REMARK II.

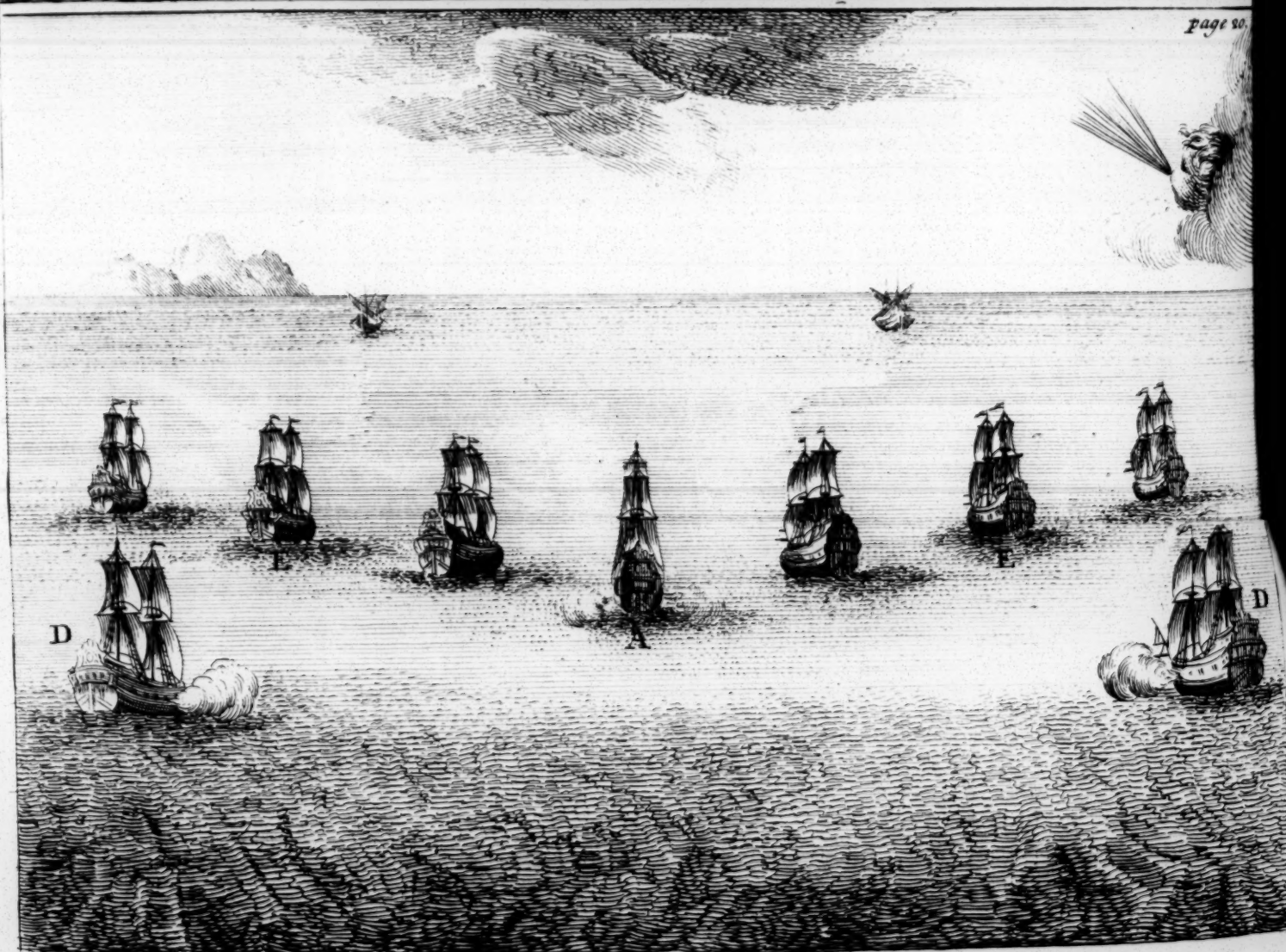
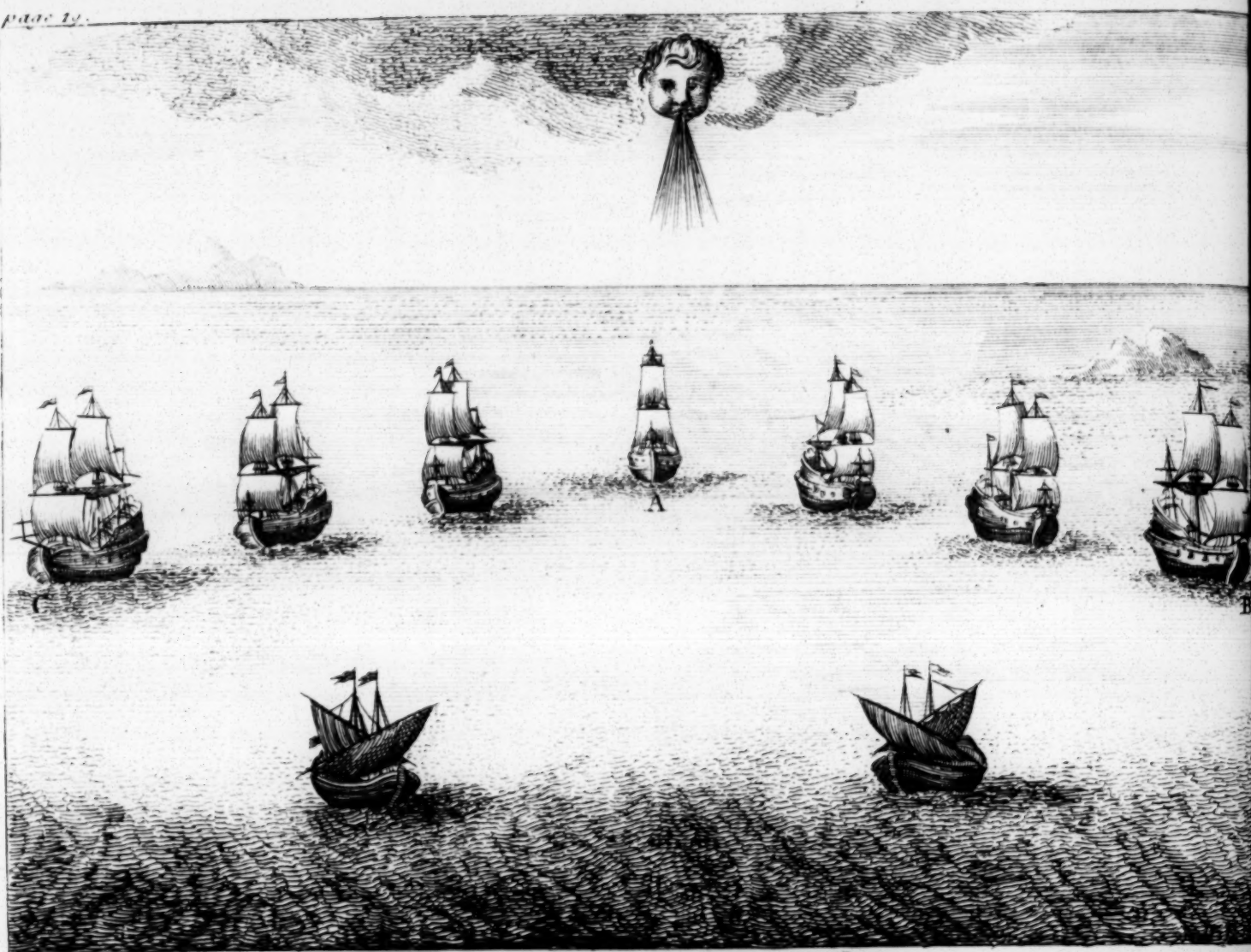
This manner of sailing is, I think, to be preferred to any of the other forms: for thereby the fleet is closed as much as possible, and ready to be ranged or formed into any position or line, that the admiral shall judge proper. When you tack, you must be careful in preserving the just distance between the columns; in order to which, it will be best for the ships in general to regulate themselves by some of the center ships of the column to windward, rather than the sternmost,

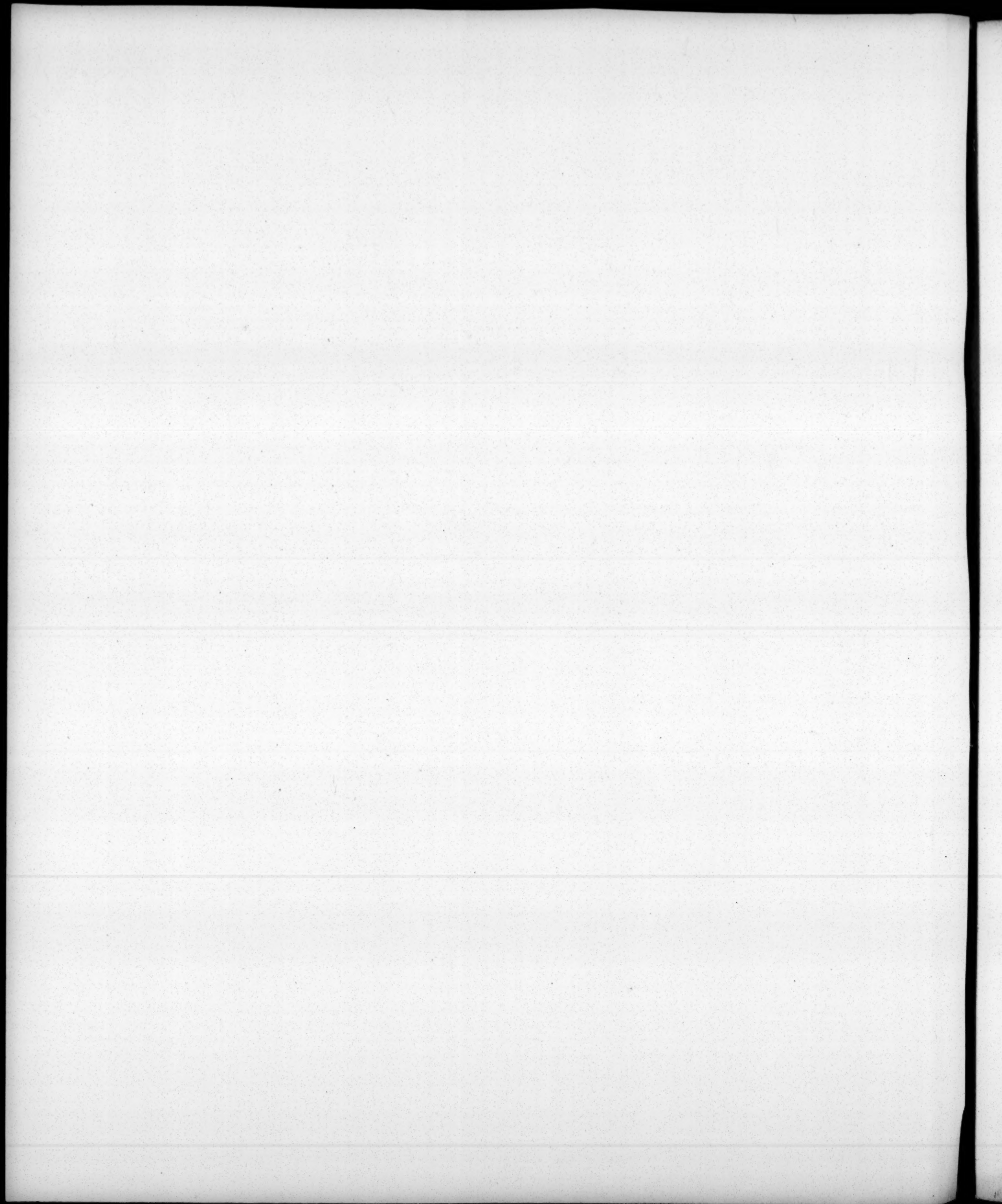
as











as they are very often too far in the rear to follow their motions. That we may have some rule to observe, I have drawn up the following table, viz.

Number of ships in each column,	3	————	2d	What ship in the weather column, the headmost ships in the lee column should follow in tacking.
	5	————	3	
	10	————	5th	
	15	————	7	
	20	————	9	
	25	————	11	
	30	————	13	
	35	————	15	
	40	————	17	

REMARK.

The most natural course in this order of sailing is to go nearest upon a wind on either tack, or to go away large three or four points; however, you may steer away more or less from the wind, or even right afore it, as you may judge most proper.

The form of a retreat.

When a fleet is obliged to retreat in fight of an enemy, the best way to secure its retreat will be by sailing in a kind of half-moon, the admiral making the obtuse angle A, and to windward in the form BAC; one part of his fleet to sail on the starboard, whilst the other goes away on the larboard tack: keeping the fire-ships, transports, &c. in the middle.

REMARK I.

This manner of ranging a fleet seems to me the most adviseable, because the enemy can never approach those that endeavour to escape, without exposing themselves at the same time to the fire of the ships

to windward : thus the enemy's ships D, can never approach the ships E, without exposing themselves at the same time to the fire of the admiral A, as likewise to that of his seconds. If the admiral thinks this form gives too great an extent to his fleet, he may easily close his wings or quarters, and make the half moon more complete ; in the midst of which he may place his convoy in safety.

EXAMPLE.

This order of retreat was exactly followed by the Dutch admiral Van Tromp, in his engagement with the English off Portland, in the year 1653. The English fleet consisted of 70 sail, under the command of admiral Blake ; and the Dutch were as strong, convoying about 200 rich merchant ships. The two fleets met off Portland, where the English used their utmost efforts to bring on an action. The Dutch had the advantage of the wind, and endeavoured to avoid an engagement to preserve their convoy ; but Van Tromp, considering rightly, that if the wind should happen to change, he must be under the necessity of fighting with less advantage, determined upon bearing down to the enemy, making his signal at the same time for the convoy to keep to windward : he then divided his fleet into three squadrons, and attacked the enemy with great bravery ; they received him with equal resolution, which made the action very desperate on both sides, several ships being disabled, sunk, burnt, or destroyed ; and nothing but the darkness of the approaching night could separate two such obstinate enemies : during which, each prepared to renew the action, that still remained undecided, with greater fury the next day. Van Tromp found himself much embarrassed how to act ; but, after many deliberations,

tions, he resolved at last upon that of a retreat : he therefore drew up his fleet into an half-moon, placing his convoy in the middle ; that is to say, his own ship to windward formed the obtuse angle of the half-moon, the rest ranging themselves on two lines upon a wind on the same tack, in order to form the faces of the half-moon to cover their convoy. He then made what sail he could, and went away large, firing to the right and left of him, at all those that attempted to insult his wings or quarters : and would have entirely saved his convoy, if some of his ships had not basely deserted him. The English ships immediately took the advantage of the intervals these ships left in the face of their floating half-moon, and carried off several of their merchant ships ; which obliged admiral Tromp to replace himself in the line of battle as before, and continue the engagement till night should give him an opportunity of resuming his order of retreat. He was chased the next day by the enemy ; but, after sustaining a few broadsides, he got safe into harbour, having acquired by his great valour and skill, a rich convoy to his country, that narrowly escaped falling a prey to the enemy.

REMARK II.

The most natural course in this form of sailing is to steer away before the wind : but, if necessary, the ships may bear away large upon either tack, or even may keep close upon a wind.

REMARK III.

When you chase a fleet that endeavours to escape, you detach your best cruisers after them, in order to pick up the stragglers, or force them

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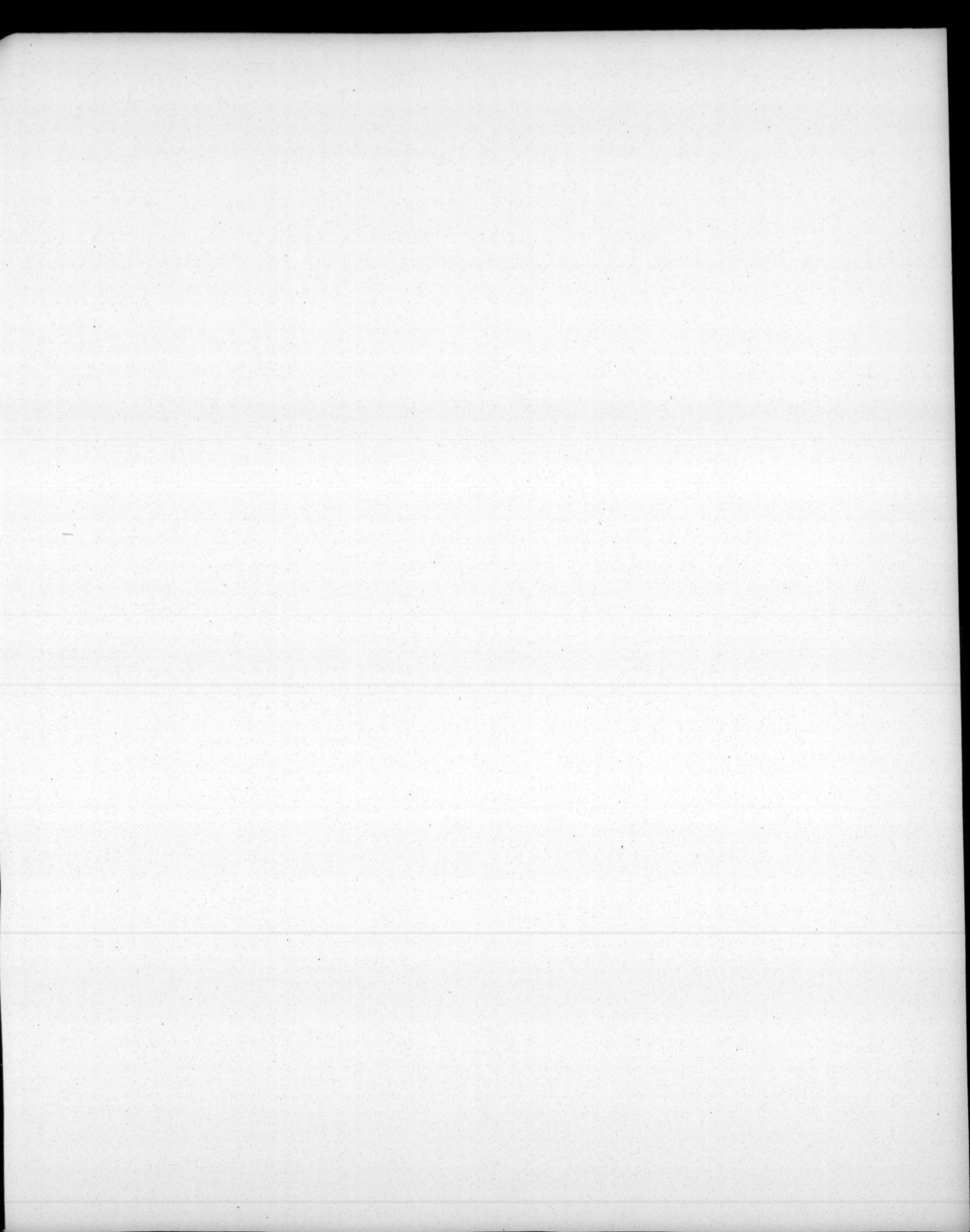
to action ; the body of the victorious fleet should keep the same order or line with the enemy, as nigh as possible, to be ready for action, if necessary. This is only to be understood, when the fleet that is chased may not be so inferior to the other, but that it may hazard an action ; for if the one bears no proportion to the other, they must bear down upon them in the same manner as a conquering army ashore carries all before it, when it has forced an enemy's camp. Otherwise, were the conquerors to wait to draw up in form, the enemy would undoubtedly take the advantage of such an opportunity to make their escape.

To guard a streight or passage.

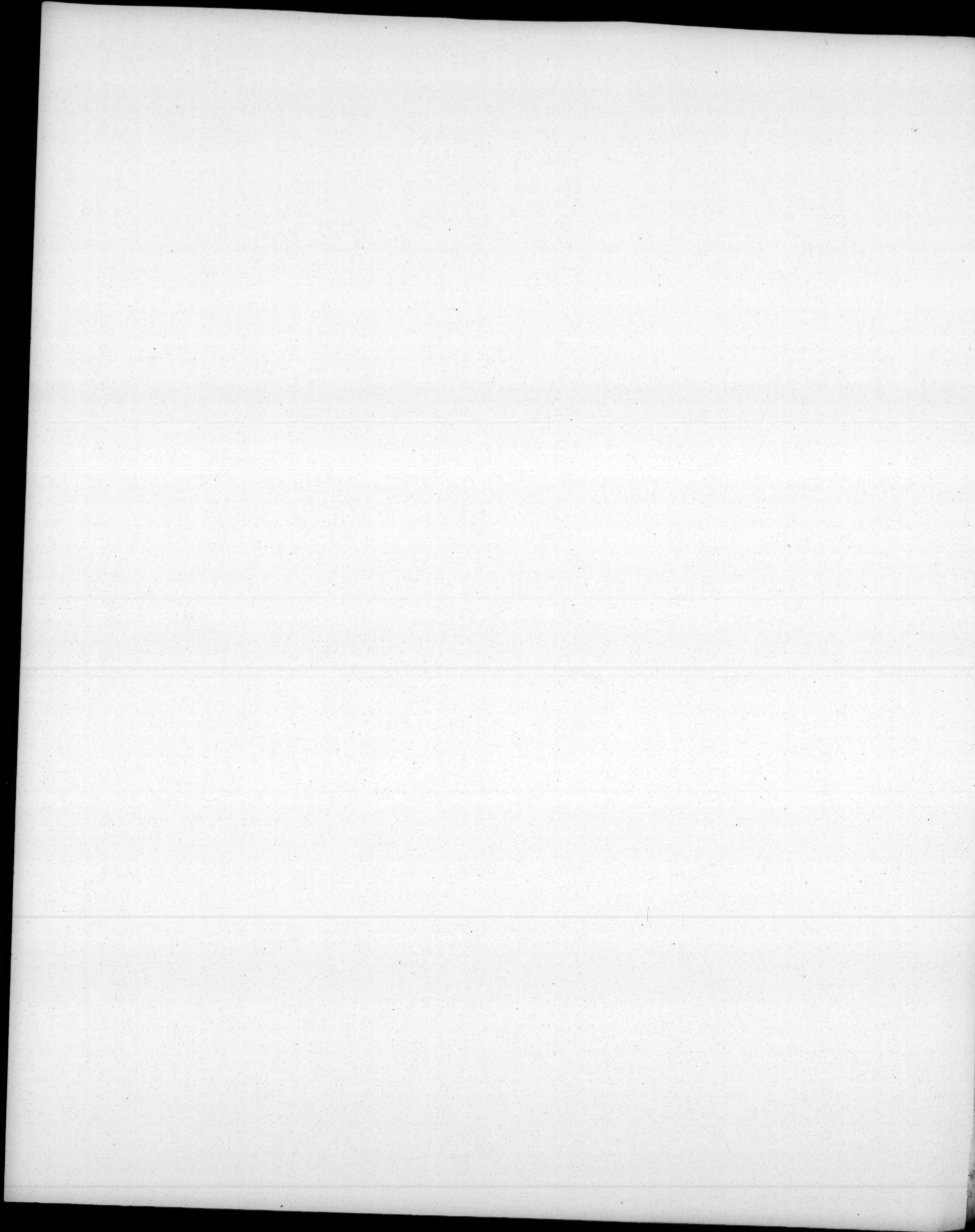
In order to protect the entrance into any streight or passage in the most effectual manner, you should have a fleet double in number to that which would force its way through ; then you must make two divisions, the one to keep on one side, whilst the other kept on the contrary side. Thus, in order to guard the streight AE, that the fleet CD may not pass through, one squadron AB cruises on one side, whilst EF cruises on the other : therefore when the enemy CD present themselves at the entrance, the squadron EF to windward crowds all the sail they can, before the wind upon them, at the same time that the squadron AB keeps its wind to intercept them. So that, in this manner, it will be impossible for the squadron CD to escape, by any method, or manœuvre, it may attempt.

R E M A R K.

If these precautions are not taken, and that the squadron, ordered to guard the passage, should find itself to leeward, as AB, the enemy
CD







CD may, by keeping close along the weather shore E, escape the pursuit, and elude all the efforts such a squadron may make to prevent their getting through. If the squadron that guards the passage should be stationed to windward, as EF, the ships CD may edge away to leeward, and range close along the coast A of the strait; and the many occurrences that happen at sea, may give them an opportunity of amusing the enemy, till night comes on to favour their escape.

EXAMPLE.

Had the allies used these precautions in the year 1690, they might have prevented the French squadron from passing through the straits of Gibraltar to join the rest of the fleet off Brest. The count de Chateau-renaud had but 5 large and 2 small ships, and the allies had above 20: it would have been an easy matter for them to have extended themselves on both sides of the straits, in two squadrons, either much superior to the enemy. However, they chose to keep on the weather-shore, in order to have it more in their power, as they thought, to bear down on the French, whenever they should attempt to push through. The count presents himself at the entrance of the strait a few hours before night, with a light breeze of wind at S. E. discovers the English over on the coast of Barbary: the valour so natural to the count de Chateau-renaud, made him despise a danger the more it seemed inevitable; he puts his little squadron into good order, advancing with an air of boldness, as if he were determined to dispute the advantage of the wind with the enemy: but, night coming on, he pushes for the entrance of the straits; the wind, tide, all favoured him: the English crowded all the sail they could after him;

but all their efforts were in vain, for they soon lost sight of him, without being able to account for so extraordinary an escape.

To force through a passage.

I.

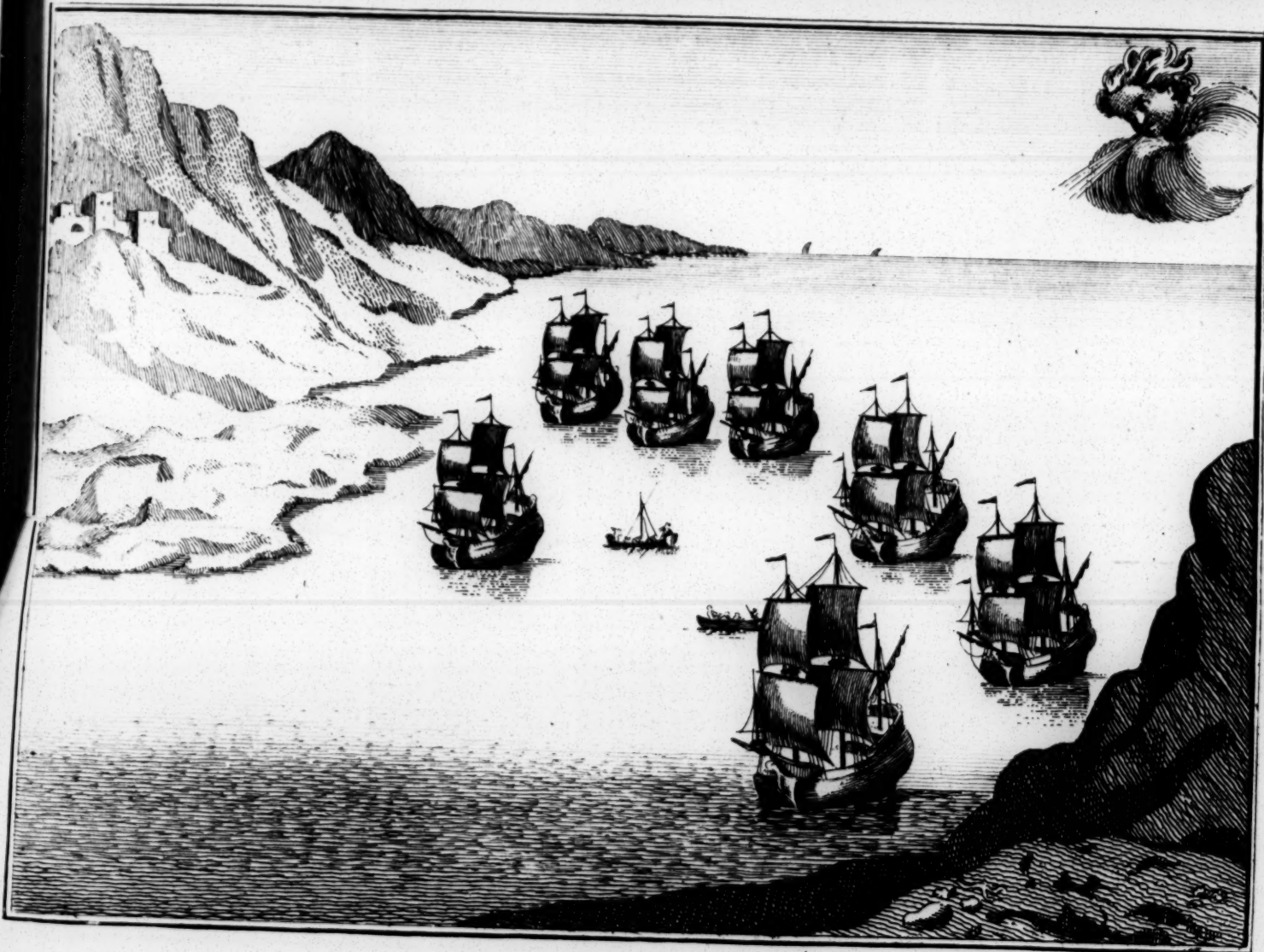
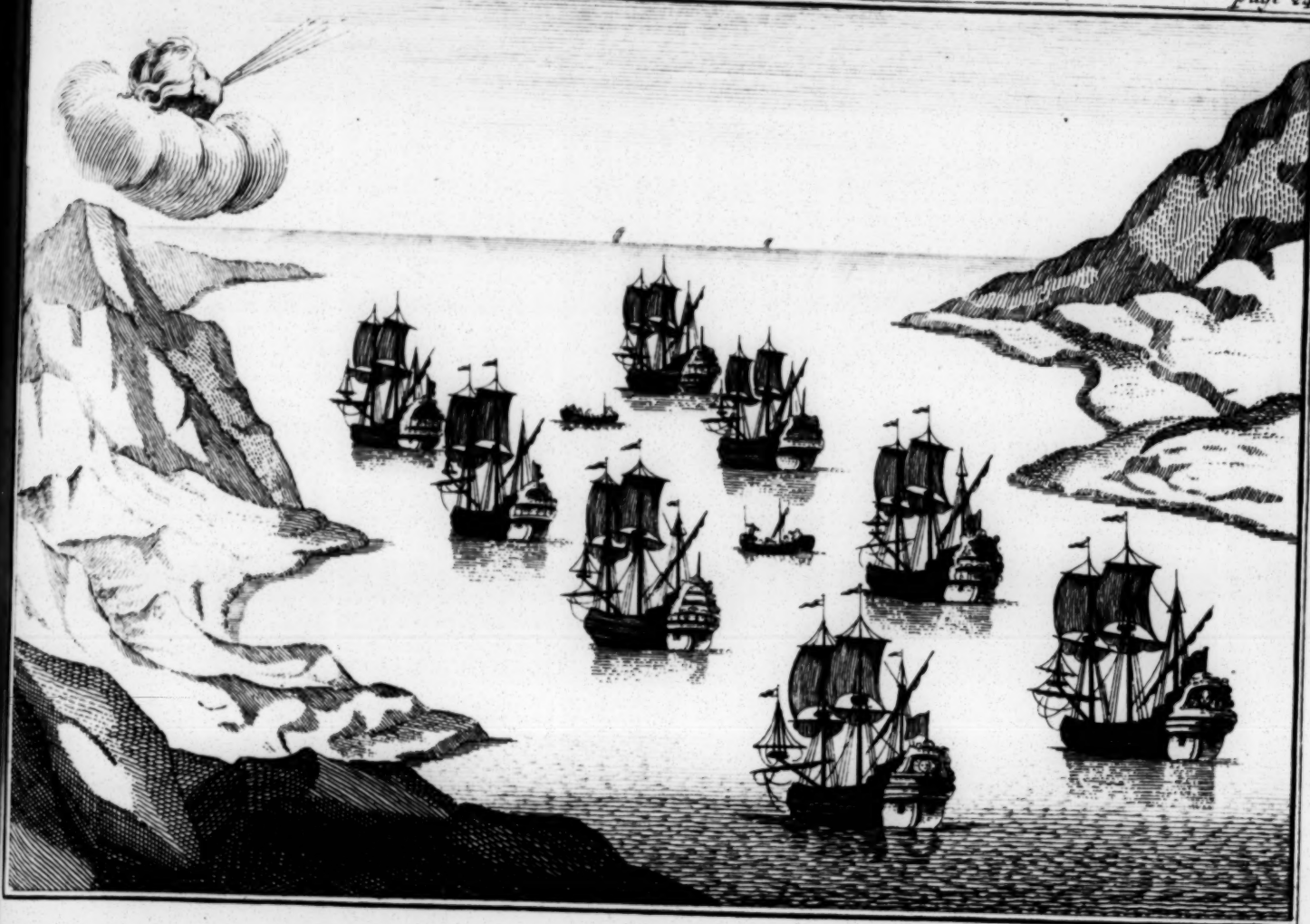
There are who maintain, that, in order to force through a passage or strait, the ships should be drawn up in two columns, placing the smaller ships in the head, and the larger in the rear, with the fire-ships, &c. between the two lines: however, such a position has, I think, its inconveniencies, because, if the two columns should be too far asunder, they might run the hazard of being parted by some unforeseen accident, or perhaps cut off: and, if too close, they may be doubled, that is to say, the enemy attacking them on all sides, may surround them, and place them between two fires.

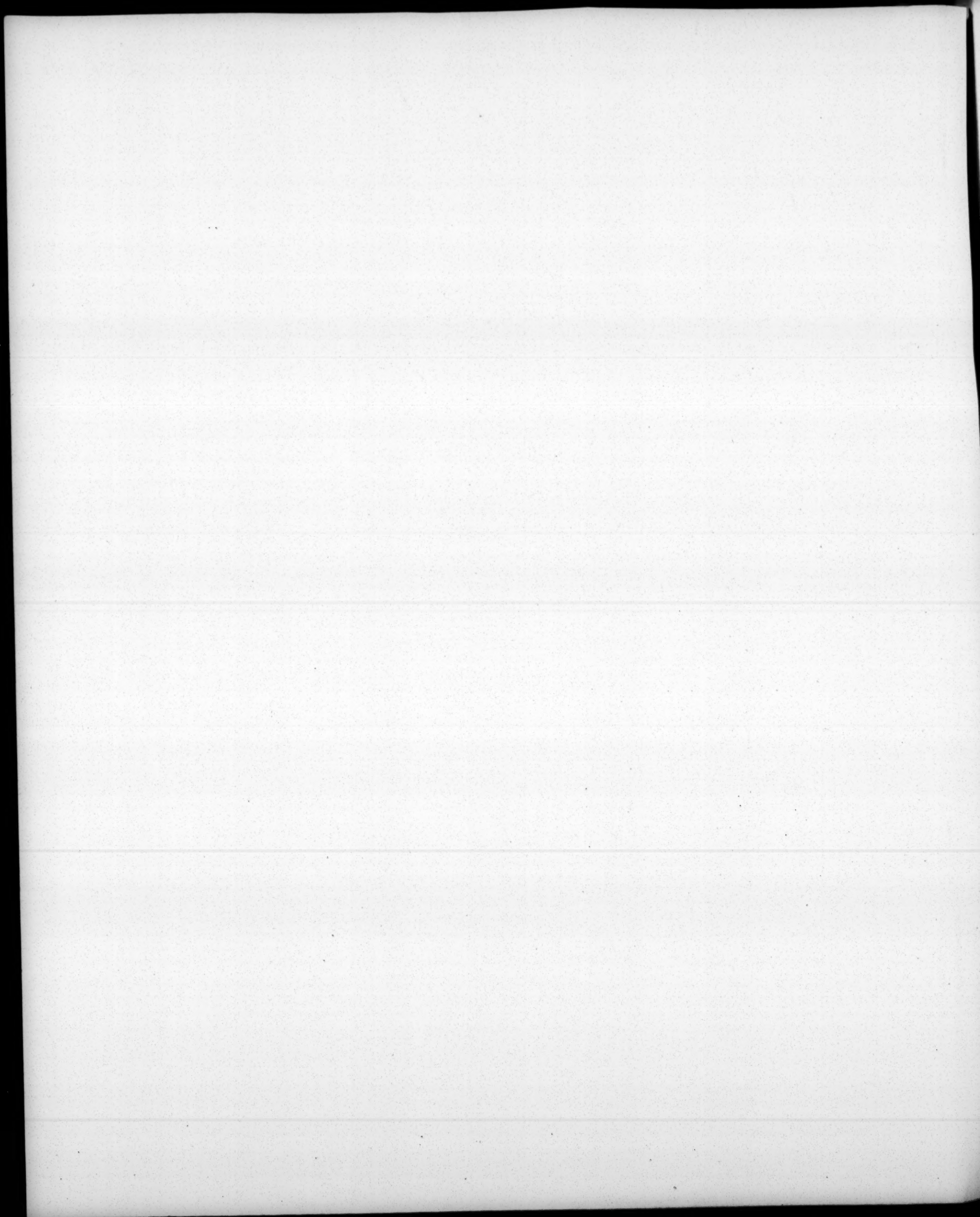
II.

I should chuse rather to range such a squadron in the form of a retreat, by closing a little the wings or quarters, to give them the less extent; in that manner, the squadron could never be attacked, without being able to defend itself from all quarters to greater advantage, than in the former position.

EXAMPLE.

The essential point of the commanding-officer, who attempts to force a passage, is to know how to avail himself of the reigning winds which may best favour his designs, as happily as the count de Tourville





did in the year 1689. The king had appointed him to command a squadron against the allies; but then he was to conduct those ships from the coast of Provence to join the fleet at Brest, which required no small address and ability to accomplish, as the allies were cruising off Ushant, to prevent their junction; but the French admiral, by his great skill and experience in maritime affairs, succeeded to his wish, by waiting patiently, however hazardous, for a strong S. W. wind, which happened to blow a few days after; too violent for the enemy to keep on the coast, and gave him the pleasure and satisfaction of arriving safe at Brest, with a shift of wind again at N. W. to the no small mortification of the enemy, whose vigilance he had so unexpectedly baffled, whilst they were obliged to steer for the channel.

* * * The second part of the treatise of L'Hofte regards only the changing the dispositions of the several squadrons of a fleet, into the van, rear, &c. methods obvious and easy in the practice, and therefore rather matter of mathematical speculation and amusement, than of real use at sea: as are likewise the third and fourth parts.

P A R T. V.

Of the motions of a fleet before it is formed into lines or orders.

Explanation of the subject.

THIS part I look upon as the most difficult, and to require the the most consummate knowledge and experience of the whole naval military art: I am far from presuming to lay down rules on so important a subject to the admirals or commanding-officers of fleets or squadrons; I quote only examples; for, nothing can be ascertained in theory in such extraordinary circumstances as sometimes attend fleets and squadrons in their several stations, whether in open roads or harbours, &c. It is the greatest genius of the hero, improved by experience, that forms the general or admiral; I here only make some general reflections, and draw inferences from some few examples, that I have seen and read of, which will convey more instruction and weight than any thoughts of my own that I can pretend to offer on so vast and extensive a subject: in short, there are some cases so doubtful, that they can be no otherwise determined or guarded against, than by the circumstances that may happen on those occasions; such as, how an admiral is to act, and how to dispose his fleet, when he finds himself greatly inferior to the enemy. There are scarce any rules to be prescribed in so dangerous a situation; resolution, bravery, and superior skill, we often see overcome every other deficiency in the course of an engagement. There is a vast difference between a land and sea action;





a land-army, when it is inferior, can entrench, and avail itself of many advantages, as woods, rivers, defiles, &c. yet at sea, there is no other resource but in the wind, which is too precarious and inconstant to depend upon : we should judge of a naval-army, as of an army at land, which may be surprized in an open champain country, where neither time nor place will admit of an opportunity to entrench or secure itself ; I should therefore think that such an army would be greatly at a loss how to extricate itself in the like situation, when attacked by a much superior force.

S E C T. I.

To anchor.

When a fleet comes to an anchor, there are five circumstances to be considered, 1. That the ground be good and holding ; 2. That the place be well sheltered against the reigning winds, that blow on the coast where you anchor ; 3. That you may easily get under sail with the same wind that may serve an enemy, and at the same time be able to dispute the advantage of the wind with them. 4. That you can readily form the line as soon as you get under sail. 5. That the ships may have room to keep clear of each other in getting under way : in order to which we should give the ships a good berth, when we come to anchor making one or many lines, about three cables length asunder, and 120 fathom between each ship.

E X A M P L E.

It was no doubt by such wise precautions, that the duke of York saved his fleet in Solebay in the year 1672 ; it was composed of 60 En-

glish and 30 French ships ; his royal highness kept the sea a long time to draw out the Dutch to a decisive action : but seeing they still persisted to secure themselves amidst the banks and shoals of their own coast, and could not by any means force them to a battle, he took the resolution of returning to Solebay, to refresh and recruit his men with proper necessaries. Admiral de Ruyter, who commanded the Dutch fleet, thought proper not to let slip so happy a conjuncture, as he imagined, of surprising the English as they lay at an anchor in the road : he accordingly set sail with all his fleet, which was equal to the duke of York's, on the 6th of June, and stretched over on the English coast, with the wind at N. E. for Solebay, where he did not doubt but he should meet with the enemy in some disorder and confusion ; but the duke, like an experienced officer, ordered the count d'Etrées, vice-admiral, and afterwards marechal of France, who commanded the van, to anchor out in the offing, placing himself, with the rest of his fleet in such a manner, as to enable him to receive the Dutch admiral in a proper position, whenever he should be informed of his coming. Upon his appearance, the count d'Etrées formed the line with incredible alertness, kept close to the wind, and having stretched out the length of the squadron of Zealand, commanded by vice-admiral Barker, begun the action, the 7th of June at 8 in the morning, and fought the enemy with such bravery, that several of their ships were disabled : he had even made the proper disposition to re-tack, and charge through Barker's squadron, if the calm, which came on, had not prevented his glorious design. The duke of York was engaged at the same time with de Ruyter, whilst the earl of Sandwich in the rear attacked the Dutch rear-admiral Van Ghent : but the clouds of smok
being

being dispersed, and the ships no longer under command in the calm, the two fleets found themselves so intermixed and embarrassed with each other, as greatly heightened the horror of the action, and made it the bloodiest that ever was fought. The gallant earl of Sandwich perished with his ship, that was set on fire by a Dutch fire-ship : soon after which his death was revenged by that of the admiral of the Amsterdam squadron, and by the loss of two Dutch line of battle ships, one of which was taken, and the other sunk. The duke of York shifted his flag twice. In fine, the battle lasted with incredible obstinacy on both sides till night, which favoured the retreat of the Dutch ; the duke pursued them next day home to their very banks, where, having sheltered themselves, they escaped a total defeat from the hands of a victorious enemy.

REMARK I.

I do not enter into a detail of rowing guard at nights, &c. and the other necessary precautions that a commanding-officer shall see proper to take, according to the several circumstances and situation of his fleet, as they make no part of the design I proposed to myself in this treatise.

REMARK II.

We see by the preceding example how important and necessary it is to be always in readiness to get under sail, to receive an enemy ; and we may learn by the following example how dangerous it is to wait for an enemy at anchor.

EXAMPLE.

EXAMPLE.

The marechal duke de Vivonne, viceroy of Sicily for the king of France, having intelligence that the enemy, after the engagement off Augusta, had retired to the port of Palermo, resolved to go and attack them in the road. He accordingly embarked on board the Sceptre, commanded by Mons. de Tourville, as commodore, who hoisted an admiral's flag, and arrived the 2d of June, 1676, in sight of Palermo, having 27 ships of the line and 25 gallies. He sent his cruisers to reconnoitre the position of the enemy, who brought him intelligence, that they consisted of 27 ships, and 29 gallies, and lay at anchor in a line, fronting the fort of Castel-del-Mar, and under its cannon, were defended on the right by the grand tower, and the artillery of the ramparts of the city ; and on the left by the batteries of the mole. The marquis de Priuli, chef d'escadre, (commodore) was detached with 9 ships, and 5 fire-ships, and the chevaliers de Bretevil and Bethormas with 7 gallies to bear down upon the enemy to the left ; all which was executed with so much bravery and resolution, that the van-guard of the enemy were obliged to cut and slip, and run ashore under the batteries of the town, where our fire-ships burnt three of their ships to the water's edge : the whole was destroyed by the French with very little loss.

To gain the wind.

A numerous fleet generally gains but little by plying to windward : however, they are sometimes obliged to make what sail they can, to keep the advantage of the wind ; and to continue standing off and on
for

for several tacks, lest they should fall to leeward, and lose the advantage they had already gained. On which I make the following reflections.

I.

A fleet that is obliged to keep plying to windward, must, if possible, tack all together, and continue as long as they can upon each tack ; because that in tacking one successively after the other, one ship is sometimes forced to bear away a little for another to give her room to tack, lest she should fall on board of her ; besides, if they make but short trips, they must be obliged to tack so much the oftener, and consequently lose what ground they had before gained to windward.

To dispute the wind with the enemy.

I.

The fleet to leeward should avoid extending itself the length of the enemy's line, in order to oblige them to edge down upon theirs, if they intend to attack them ; which will be a means, if they still persist in doing so, of losing the advantage of the wind.

REMARK.

It is impossible for a fleet to leeward to gain to windward so long as the enemy keep their wind, without a change happens in their favour. Therefore all that a fleet to leeward can do must be to wait with patience for such a happy change, which they will undoubtedly avail themselves of, as well as any mistake or inadvertency the enemy may commit in the mean time. And as long as the fleet to leeward does not extend its line the length of the enemy's, it will be impossible
for

for the latter to bring them to action, without running the hazard, by bearing down, of losing the advantage of the wind, which both fleets will be so desirous of preserving.

II.

In fine, that an admiral may benefit by the shifts of wind that frequently happen, he must in a manner foresee them ; which will not appear so extraordinary to officers of any experience, who know what winds reign most on the coast, or off the head-lands where they may expect an enemy : and though an admiral may be sometimes out in his conjecture, he also as often succeeds so happily as to gain the advantage of his enemy.

EXAMPLE.

Monf. du Quesne, the French admiral, by his superior skill in these particulars, gained a considerable advantage over the Dutch fleet, when he engaged them off Strombolo in the year 1676. He waited till the next day for a shift of wind, which happened in his favour as he foresaw, and gave him an opportunity of tacking to windward of the enemy, and bearing down upon them in good order ; an advantage they neglected the day before, which fatal oversight they could never afterwards recover.

III.

The disposition or projecting of headlands, of currents in the Mediterranean, and tides in the ocean, contribute greatly towards gaining the wind of the enemy : for sometimes you may only range a coast along, or keep out in the offing, to gain a few leagues upon a tack ; and, I may say, I think with justice, that the knowledge of these ad-

advantages is as essential to an admiral at sea, as the geography of the several countries, with their woods, roads, course of rivers, &c. he is obliged to march through, is to a general of an army ashore.

IV.

The fleet to windward ought to keep the enemy, as much as possible, always a-breast of it ; because, by doing so, they will preserve the advantage they may have, unless the wind greatly changes against them. They should force them likewise to keep their wind, unless they think it more prudent not to engage ; but when that is the case, they should keep entirely out of sight of the enemy.

To avoid an action.

I.

The fleet to windward can never be forced to engage ; because it can always continue on that tack, which keeps the enemy at the greatest distance from it, by stretching out upon one tack, whilst they continue upon the other.

R E M A R K.

If the wind was not so subject to change, it would be very easy for the fleet to windward to keep in sight of the enemy, without being under any apprehensions of being forced to come to action ; but the inconstancy of the wind obliges the most experienced admirals to avoid meeting the enemy, when they think it improper to engage them. The reason of this maxim is founded upon the impossibility of an inferior fleet's avoiding an action, when in presence for any time of a superior fleet.

II.

If the fleet that endeavours to avoid coming to action be to leeward, they will edge away the same as the enemy : but, at the same time, they should not go away right a-fore the wind, without making their retreat in a half-moon, if in sight of the enemy, So that the fleet to leeward, which is not for engaging, seeing the enemy still persist in chasing them, will bear away as they do, in order to keep them at the same distance.

REMARK.

There are some circumstances in which the fleet to leeward may put a-fore the wind, without ranging it into the order of a retreat ; that is, when it only designs to prolong the engagement, or is resolved to engage the enemy, if they still continue to pursue them to bring them to action. But, except on such extraordinary occasions, the form of a retreat puts the fleet into the best posture of defence, and with the least hazard and danger.

To force the enemy to action.

AXIOM I.

We may look upon the following proposition as a general maxim. When two fleets of equal force remain long in sight, they may alternately force each other to bring on an action. The following reasons support this maxim.

I.

If the fleet that wants to bring on an engagement is to leeward, they must endeavour to keep on that tack which forereaches most upon the
 enemy,

enemy, that they may keep them better in view, till the wind may happen to change in their favour.

REMARK I.

The least experience at sea will serve to convince us, that it is almost impossible for a fleet that once discovers itself to the enemy, ever to retire or escape, unless it secures itself in some port or harbour ; for fleets are generally at sea at a season of the year, when the nights are very short, and the days long ; so that any stratagems or false courses they may use, will avail them but little to escape the pursuit of a watchful enemy : besides, a fleet would not run the hazard of crowding too much sail by night, for fear of being separated, which may be attended with fatal consequences. A recent example of such conduct, I saw in Mons. de la Clue, in 1759, who, by crowding away too much sail at night, to push through the gut of Gibraltar with a strong easterly wind, before morning lost sight of half his fleet, and subjected himself of course, by such imprudence to fall much the easier victim to admiral Boscawen, who was in close pursuit of him with his whole squadron, and engaged him the next day with double his force ; which obliged the French admiral to make a running fight, though it availed him but little, as five out of his small squadron were burnt or taken on the coast of Portugal.

AXIOM II.

It is scarcely possible for a much inferior fleet to remain long in presence of an enemy, without being forced to an action. 1. A fleet that is superior in number may send a detachment of its best cruisers after the flying squadron, and soon bring it to action. 2. It may divide

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F 2

itself

itself into three squadrons, leaving a considerable interval between each; then, whatever course the enemy may take to escape, one or other will be always ready to intercept it.

R E M A R K.

The only resource an inferior squadron can have in such circumstances, is to bear away in the form of a half-moon: though even then, it can have no great hopes of avoiding an engagement, if the enemy persists in chasing it to bring it to action, unless they steer for some harbour or friendly asylum to secure themselves in.

C O R O L L A R Y.

We may from all this draw the following conclusive inference, that it is almost impossible for an inferior fleet, under any pretext whatever, to continue long in presence of one greatly superior to it, without being forced to action.

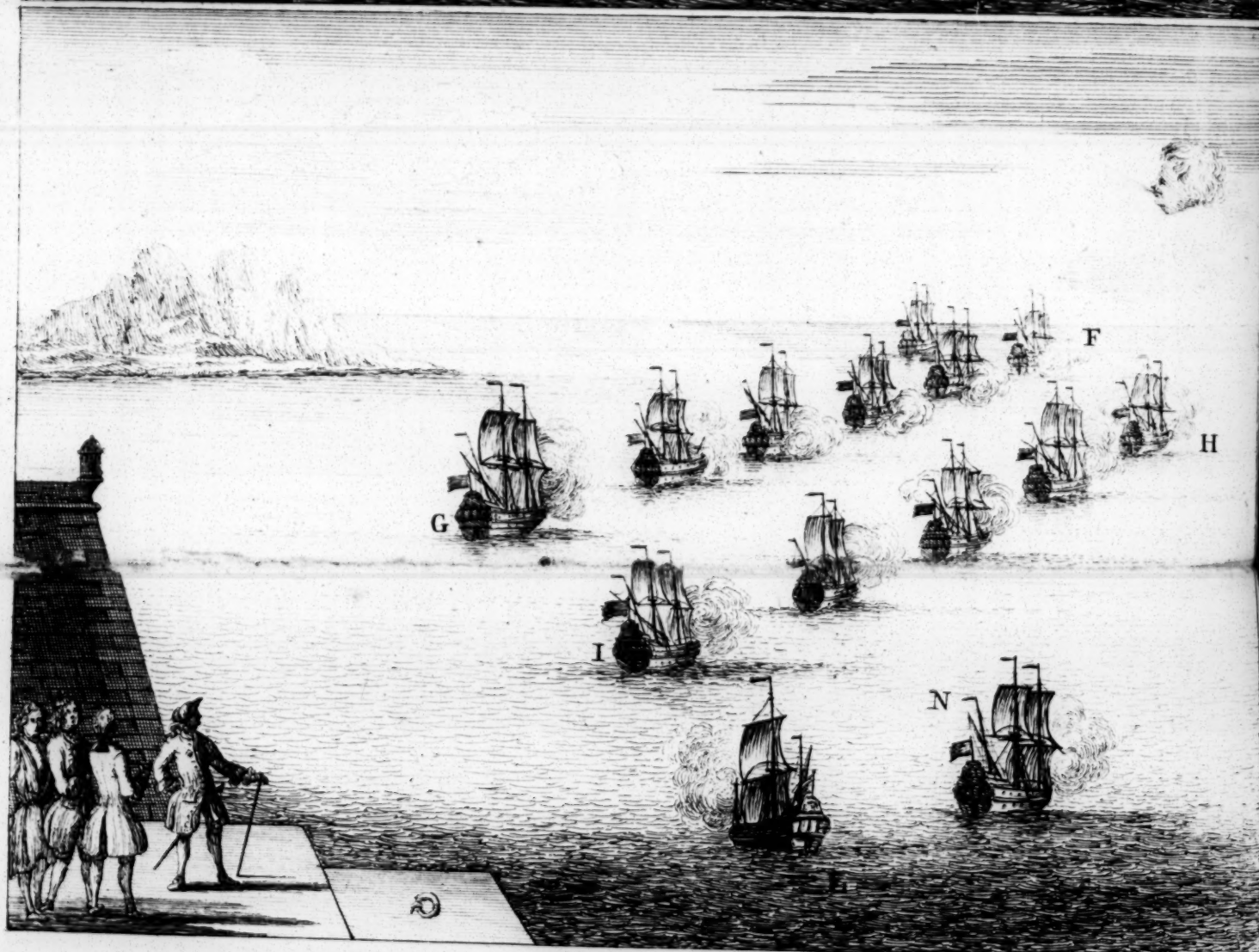
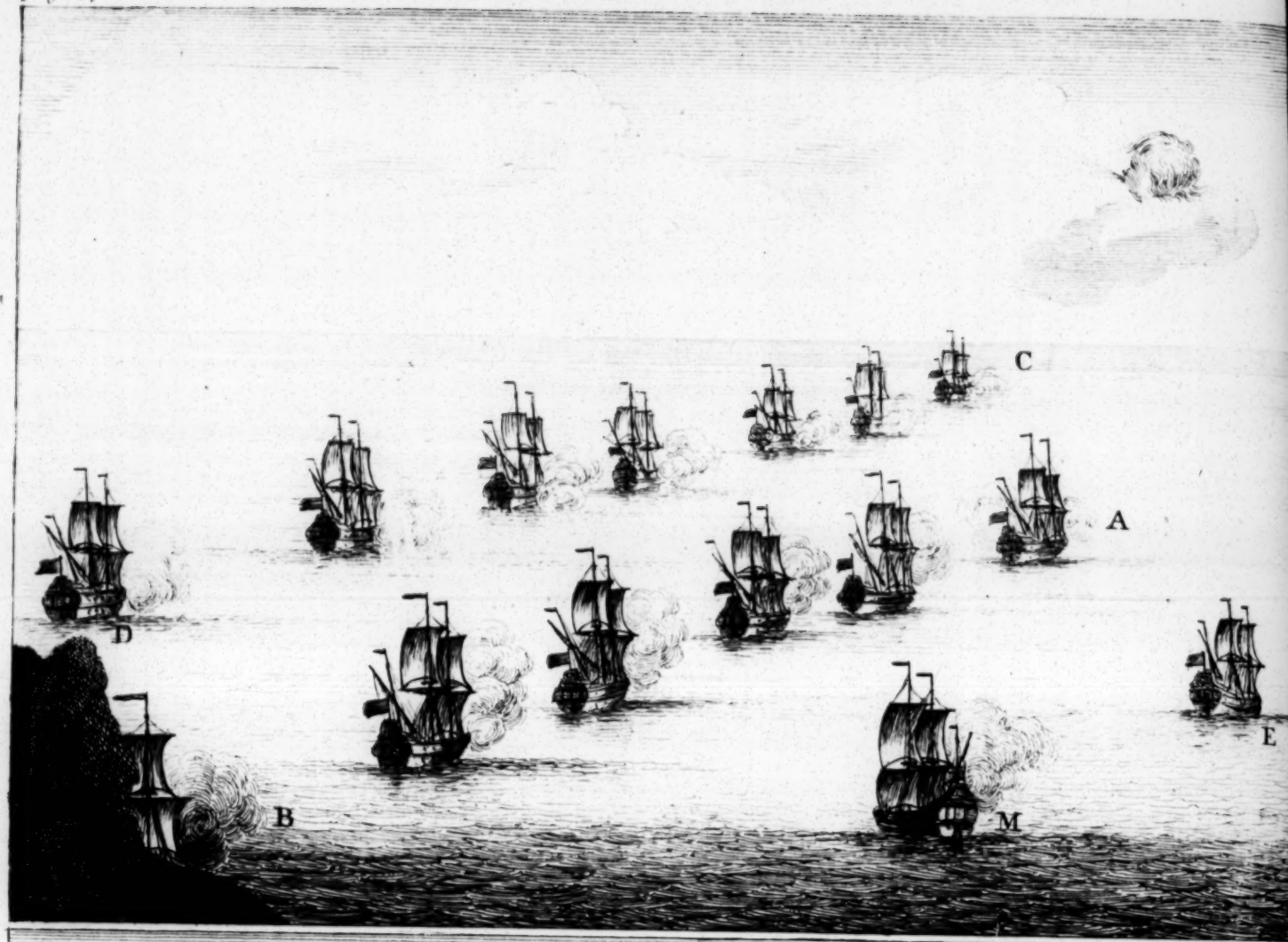
To double an enemy.

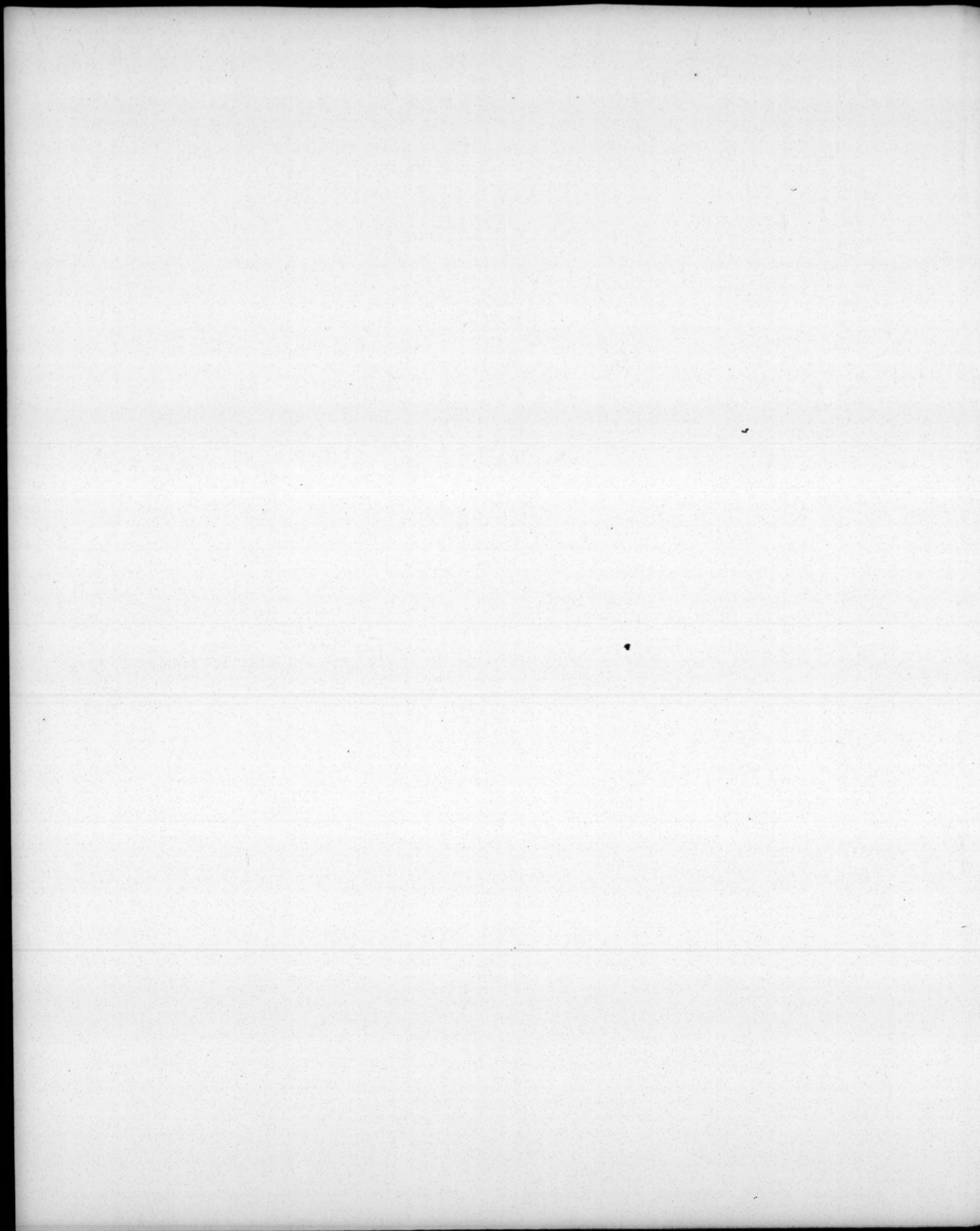
To facilitate which the superior fleet must endeavour to stretch out the length of the enemy's line, and, at the same time leaving some ships a-stern, to close and double upon that of the enemy's, and force them between two fires.

R E M A R K I.

If the superior fleet is to windward, it may so much the easier double its rear upon that of the enemy's, and force it between two fires; and even if it should be to leeward, it should likewise leave some ships a-stern of it, because of the wind's often changing during the action; besides,







besides, the fleet to leeward may insensibly edge away in the heat of the engagement to give its rear an opportunity of doubling upon the enemy, by immediately luffing up close to the wind again.

REMARK II.

I know there are, who maintain, that the enemy's line should be doubled a-head rather than a-stern : because, say they, if the enemy's van is once put into disorder, it will of course fall a-stern upon the rest of the line, and throw it into confusion : but, on the contrary, I am of opinion, that the ships will be less exposed, and find it safer to double upon the enemy's line a-stern : for if a ship should be disabled a-head, I cannot see how she can recover her own line again ; whereas, if a ship should be dismasted in attempting the same in the enemy's rear, she cannot be attacked by any of their line, without exposing themselves at the same time to the fire of two ships ; therefore may remain a-stern out of danger, till she has repaired her damages again.

REMARK III.

I am equally of opinion, that, if the ships E, M, of the fleet CD, had doubled the head A, they would run a great hazard of being destroyed : for, if the ship E should be disabled, how can she recover her own line again ? how easy might the enemy destroy her ? On the contrary, (Fig. II.) if the ships LN, of the fleet FG, have doubled the rear I of the enemy, and the ship L should be disabled, she may remain a-stern, without being under any apprehension from the rear I, which is already hard pressed by the ships G, N.

EXAMPLE

EXAMPLE.

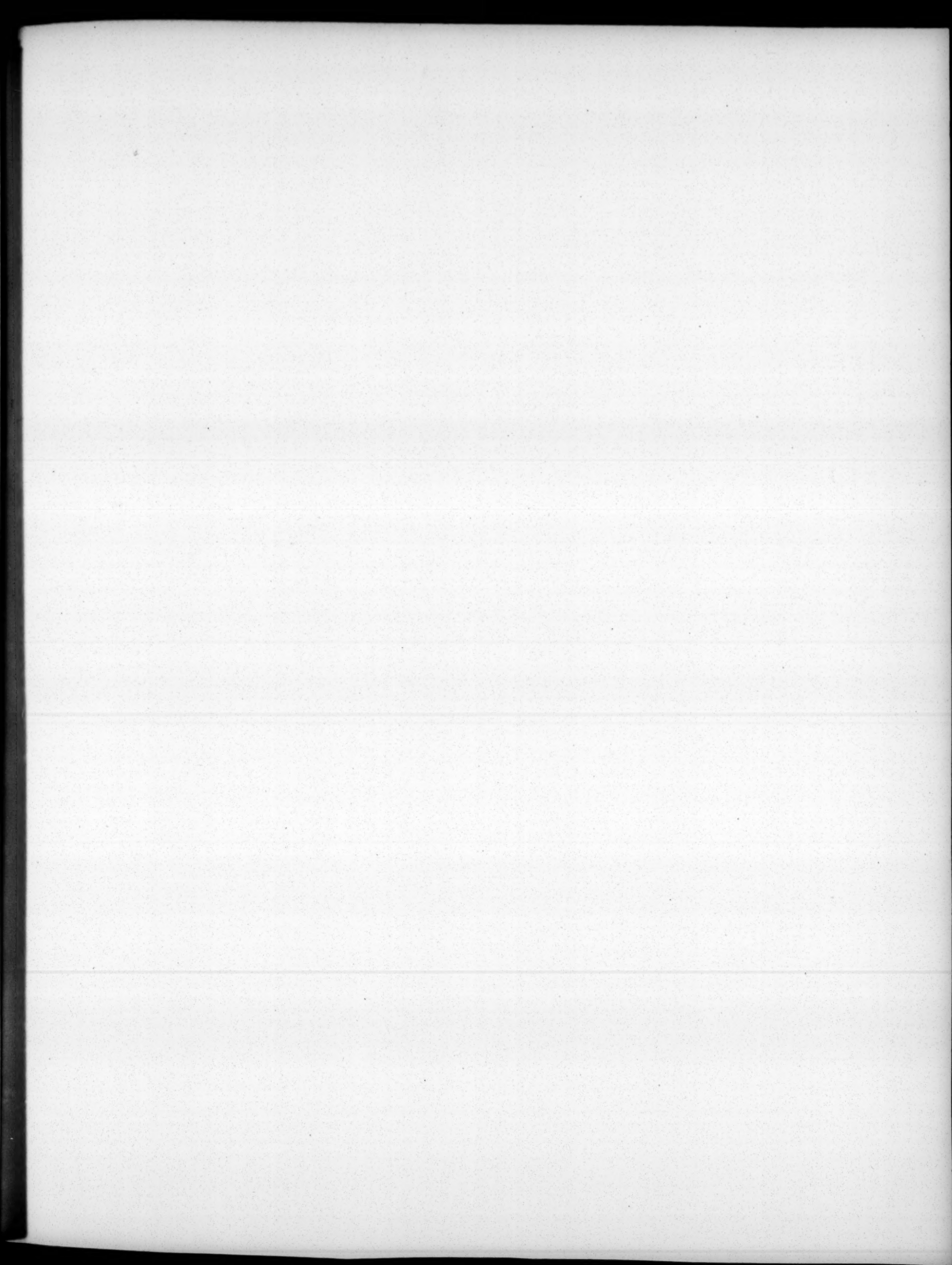
Nothing can illustrate this method of working a fleet better, than the famous engagement off la Hogue in the year 1692, between the count de Tourville and admiral Ruffel. The French, having the wind, bore down in good order upon the English: but, being at the same time so much inferior in number, it was impossible for them to extend their line the length of the enemy's; therefore could not prevent the English from extending their rear a great way a-stern of the French, which made their line so much the longer in attempting it, and consequently the ships wider asunder, (a great disadvantage against a close line :) The wind, which was at first at S. W. changing to the N. W. gave the rear of the English an opportunity of still closing its line more, and doubling upon the French; so that the count de Tourville with his division, soon found himself surrounded by his enemies on all sides, in which unlucky situation he distinguished himself with the greatest bravery and resolution imaginable, though overpowered by numbers, whose great superiority of force could be no longer resisted.

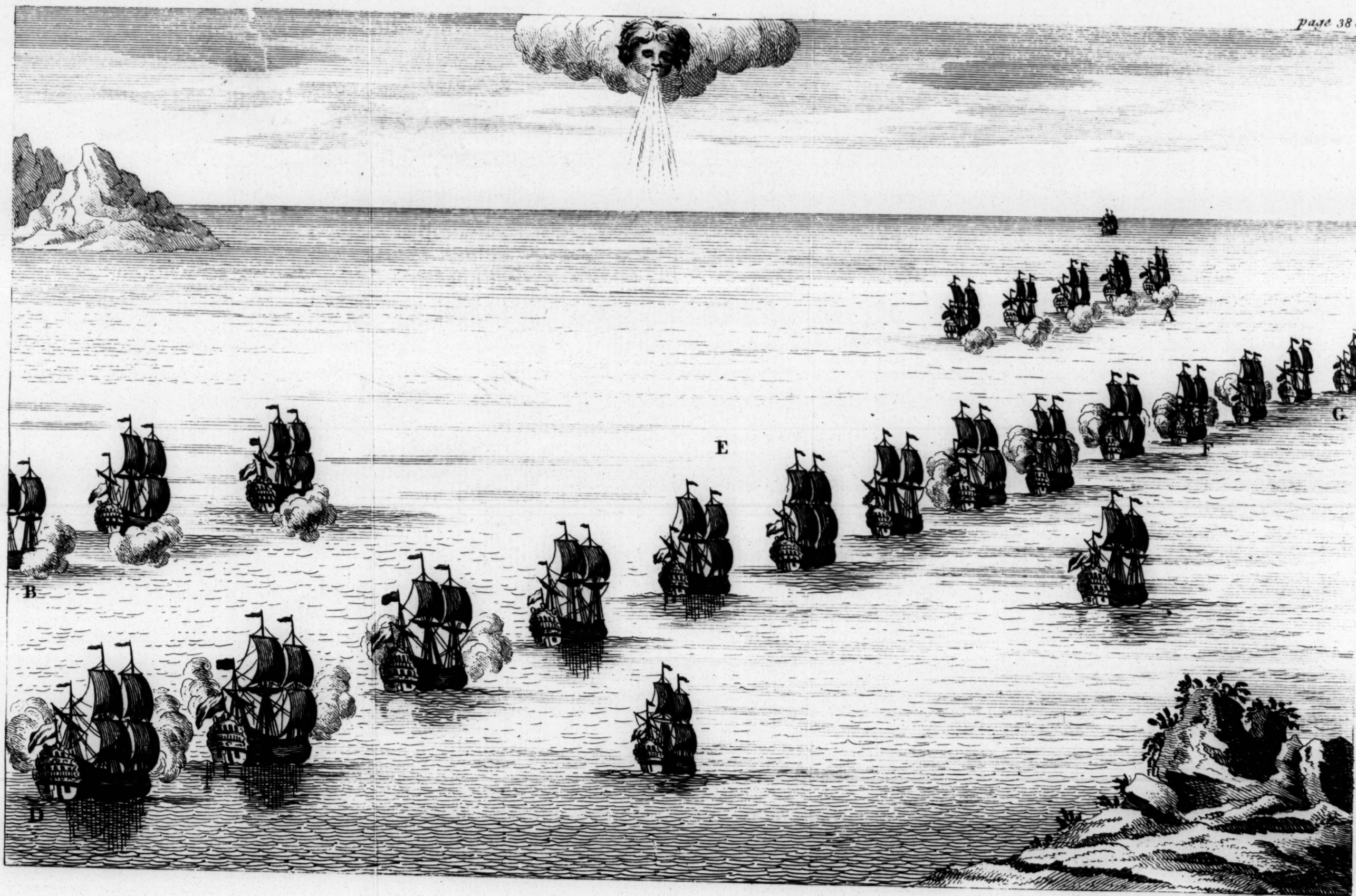
To avoid being doubled.

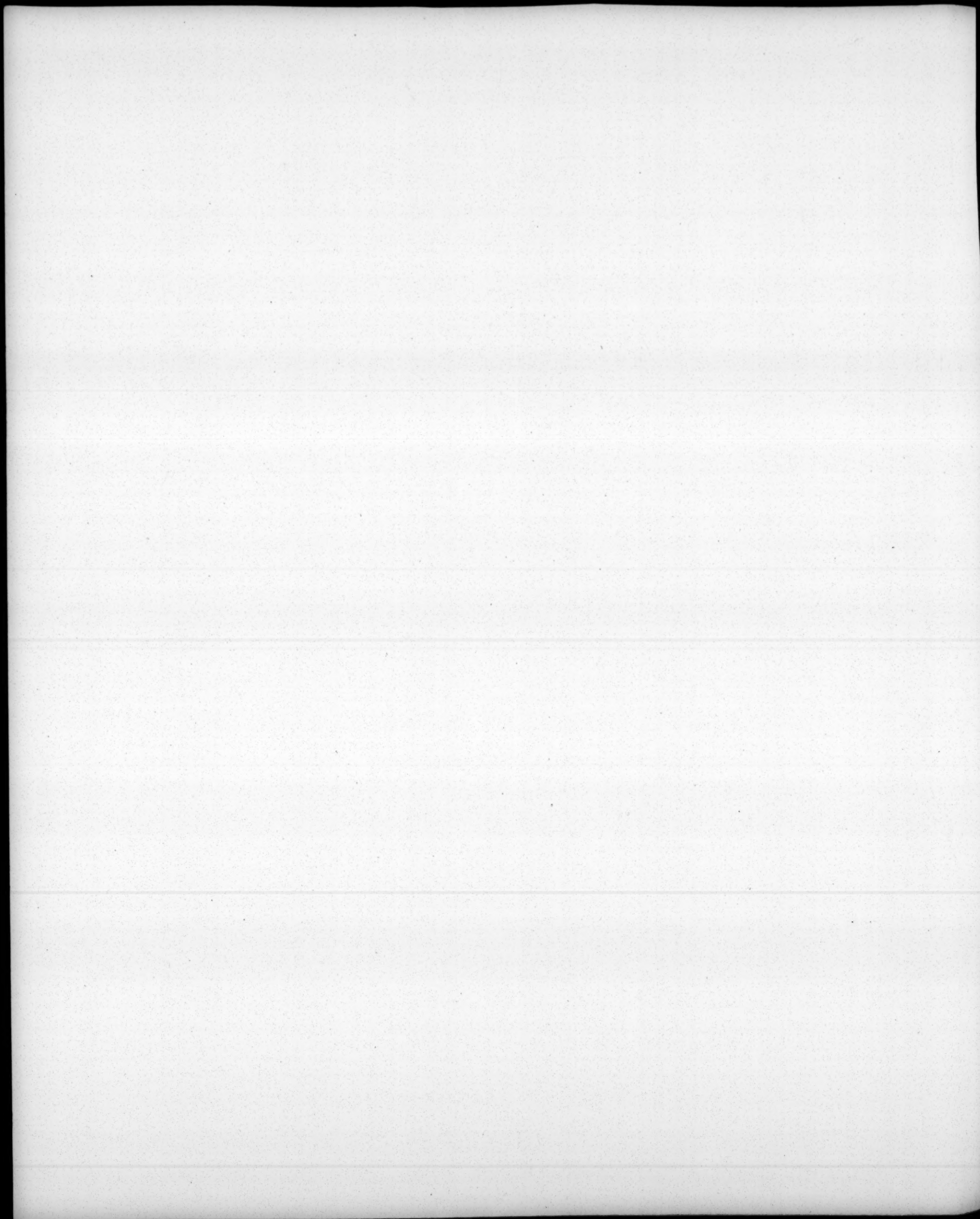
To prevent any part of the enemy's line from doubling upon yours, you must not suffer them to extend any of their ships beyond your rear; in order to which, there are several methods to be taken when your fleet is inferior in number.

I.

If you are to windward, you need not extend your line the length of the enemy's van, but attack their second division F with your van A; by







by which means their first division FG will be in a manner useless ; and if they should stretch out a-head to tack upon you, they will lose too much time, and run the risk of being separated by the calm which generally happens in the course of a sea-engagement, occasioned by the continual discharge of cannon on both sides ; you may even leave a great opening in the center E, provided you take the necessary precautions to prevent your van-guard from being cut off : and thus, however inferior you may be in number, you will have it in your power to interrupt the enemy's line from extending itself beyond, or a-stern of, your rear.

EXAMPLE.

Admiral Herbert's method of ranging his fleet, when he engaged the French off Beachy-head, in the year 1690, was generally approved of. He had some few ships less than the enemy, and was resolved to use his utmost efforts against their rear ; to effect which, he ordered the first division of the Dutch to bear down upon the second division of the French, at the same time opening his fleet in the center, leaving a great space a-breast of the main body of the enemy. He then closes his rear, which he opposes to theirs, keeping himself with his division at some distance a-breast of the center : then closing his ships, as much as possible, he opposes them to the enemy's rear, at the same time reserving his own division to attack the French, if they should attempt to push through the opening in the middle, in order to double upon the Dutch. By this method, (which shewed great forethought and experience,) he rendered the enemy's first division almost useless, because of its being obliged to stretch out a long way a-head to tack upon his
van :

van : and the calm, which afterwards came on, had, in a great measure, deprived it of partaking of the danger and glory of the action.

II.

If the inferior fleet ^{ab} is to leeward, you might leave a greater interval in the center ^e and less in the van ; but then you should have a small corps de reserve of capital ships and fire-ships, that the enemy may not take the advantage of the intervals ^e in your fleet to cut off your line.

III.

There are some again for giving it as a general rule, that the commanding officers of the inferior fleet should oppose themselves to the respective general officers of the enemy ; by this means several of their ships will remain useless in the intervals, and will be rendered incapable of doubling upon you.

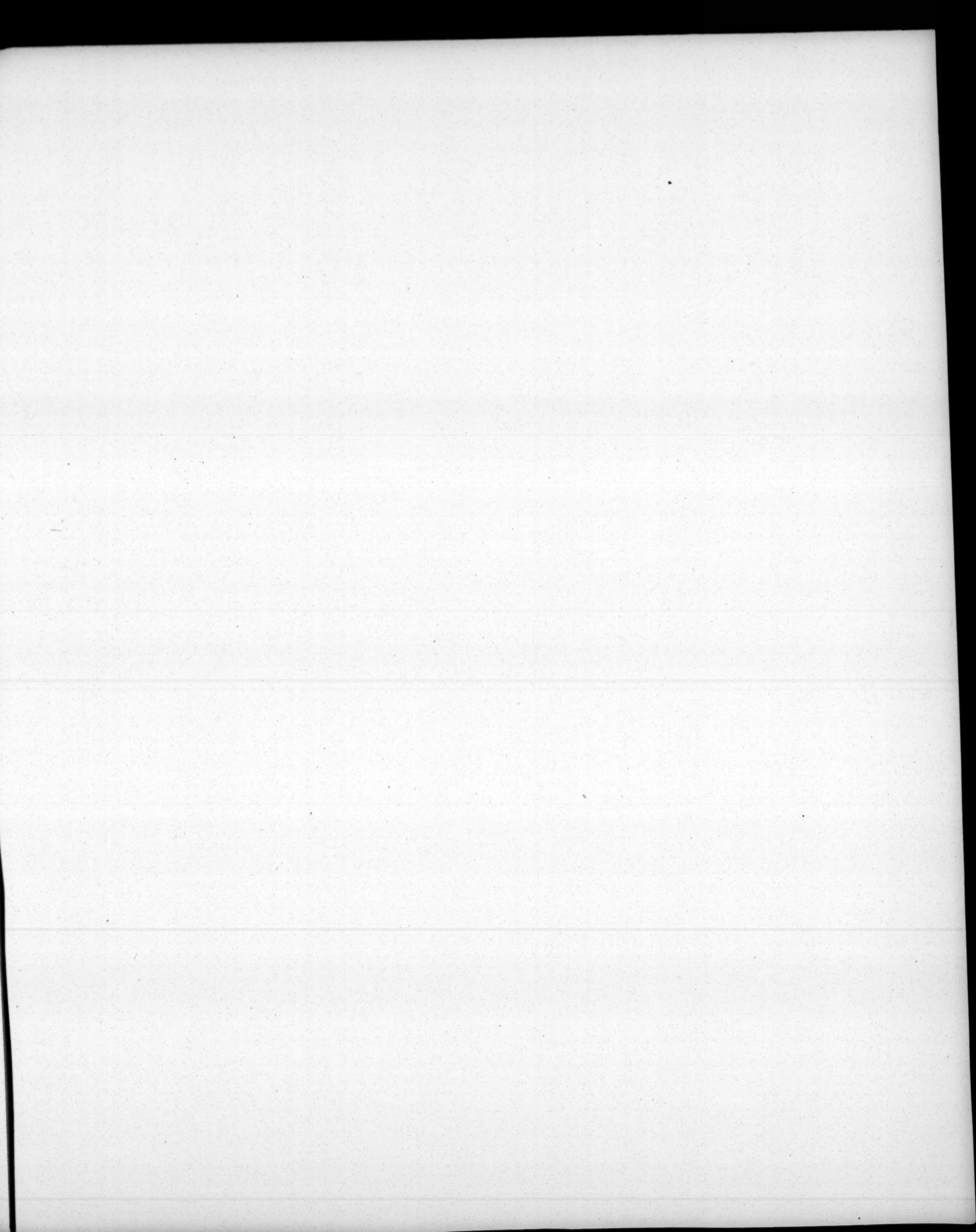
REMARK.

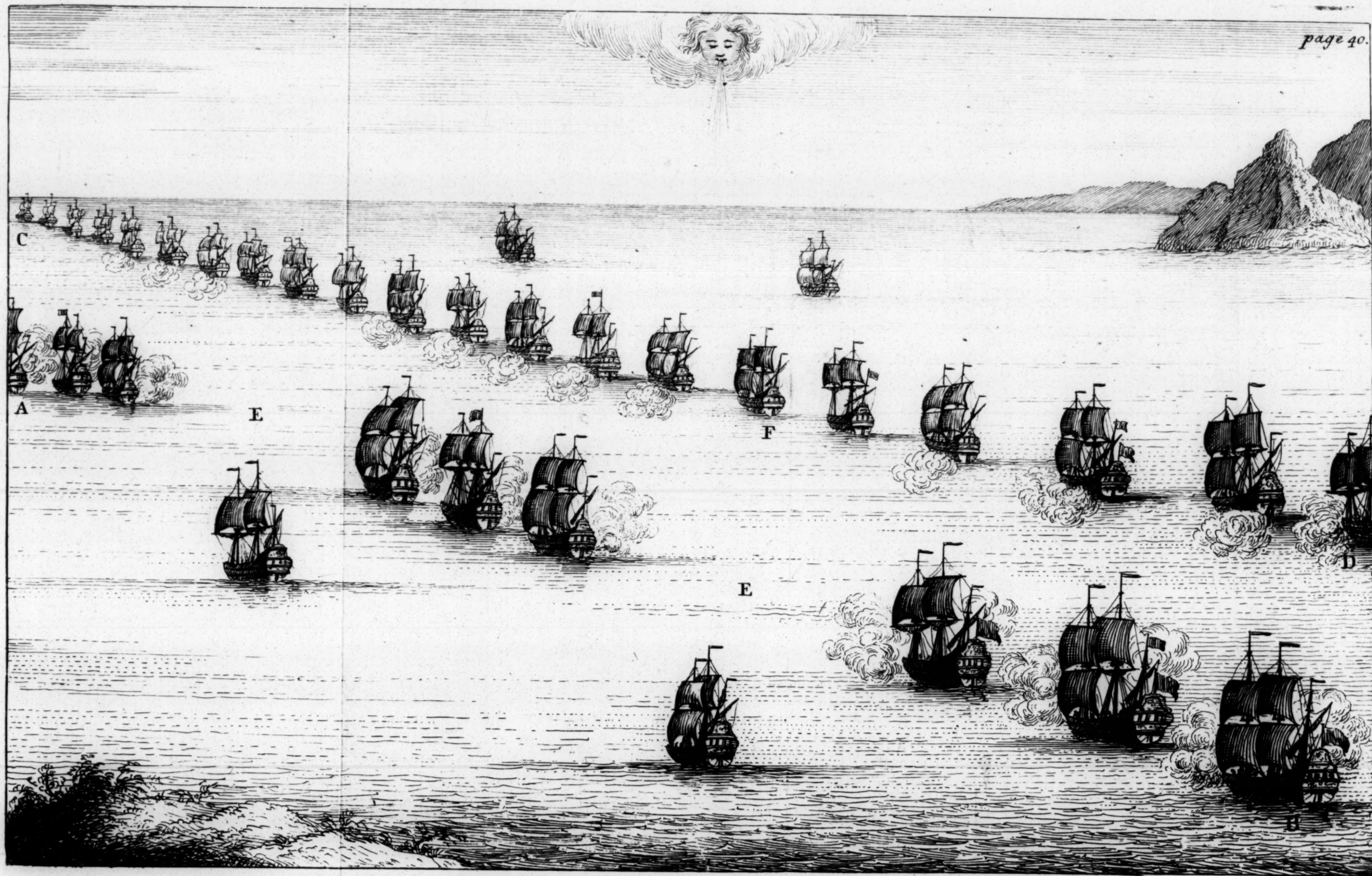
This method has its inconveniencies, because the van and rear of each division is exposed to the fire of two ships at a time, and does not secure the last division from the hazard of being doubled by the enemy's rear ; but, to remedy this, you may place the larger ships in the van and rear of each division, and order it so, that the last division may not have it in its power to extend its rear a-stern of yours.

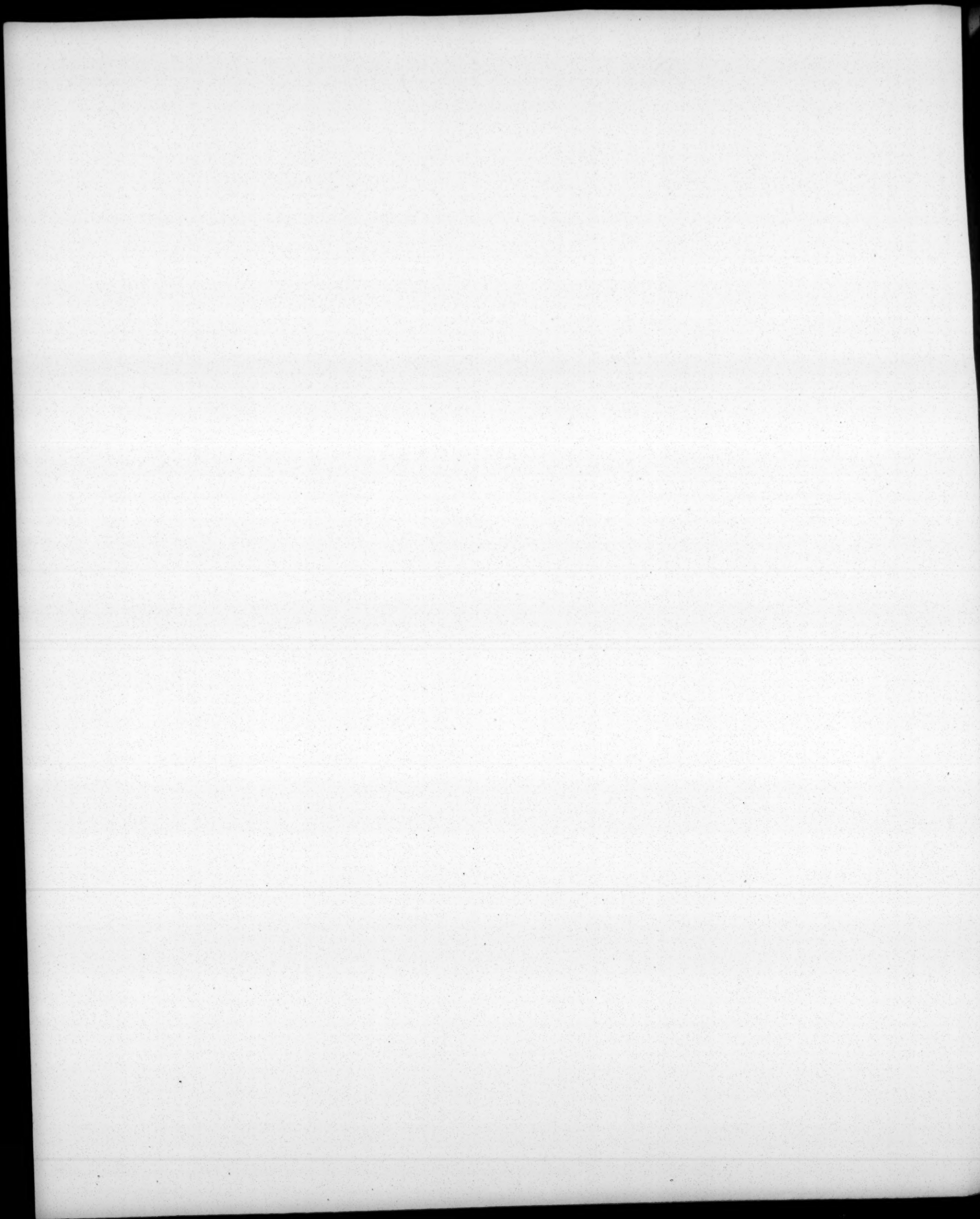
IV.

Again, others will have it, that the three squadrons of the inferior fleet should attack each a squadron of the superior fleet ; observing at the same time, that each squadron extend its line far enough to prevent the opposite line from leaving any ships a-stern of it, but rather a-head.

V.







V.

In fine, there are who rather chuse, that the inferior fleet should stretch its line so long, as to leave a great distance between the ships, that it may extend its line the length of the enemy's; but I think this last is the worst method that can be taken; because it gives the enemy all the advantage it can desire of exerting its whole force upon the inferior line: though it must be allowed, upon certain occasions, this method would be very proper to follow; such as, when the enemy's ships, though more in number, are not of such force and weight of metal as the ships of the inferior fleet.

To receive a fleet that bears down upon you.

The fleet to leeward seeing the enemy bear down upon it, will of course range itself, as expeditiously as possible, into a line of battle, by edging away a little, to gain as much time as may be necessary to form the line without confusion. They should not omit at the same time leaving some small intervals between the divisions, that the fleet may be the better able to distinguish, and have more room for action: then each commander will exert his utmost to keep his ship a-breast of any ship of the enemy's, that happens to fall to his lot; either by making more or less sail, or even tacking, (if absolutely necessary,) to preserve his station with regard to the enemy.

To force through the enemy's line.

I.

We find in the several relations of the wars between the English and Dutch, that they had often alternately traversed and charged through

G

each

each other's fleets ; that is to say, the fleet to leeward CHD, having stretched out a little a-head, tacked upon the enemy AB, and forced through their line at E, then retacking upon them immediately at C, on the other side, gained the wind of them ; but then again, the others, in their turn, regained the same advantage of them, and cut them off from their line. Thus they mutually traversed each other, cutting off and destroying one another's ships, with an invincible obstinacy and bravery not to be described.

R E M A R K.

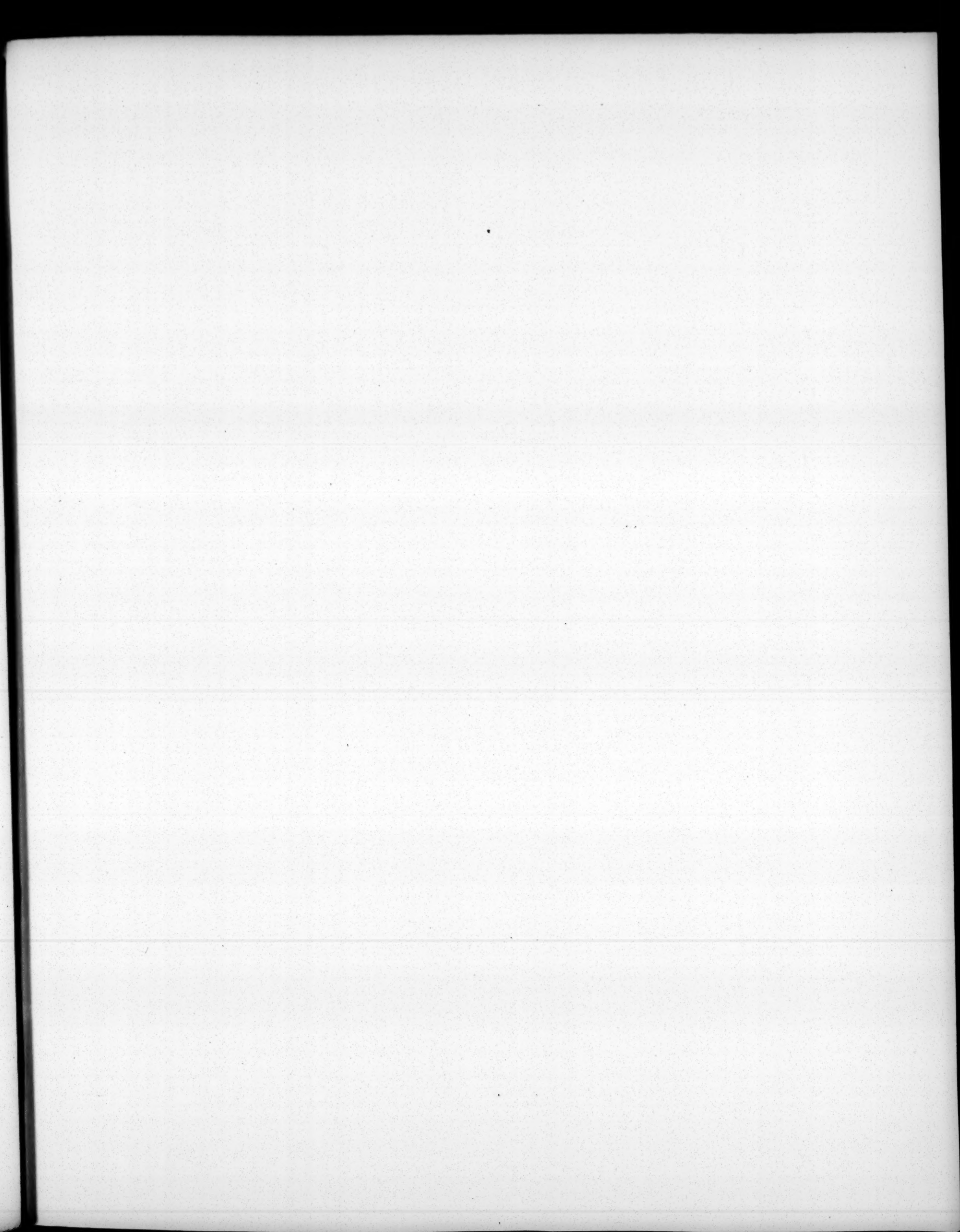
This manner of fighting and working a fleet is equally daring and hazardous, and requires the most consummate ability as well as experience, to succeed in it so happily as the count d'Etrées did in an engagement with the Dutch in the Texel in the year 1673. He traversed and charged through the squadron of Zealand, gained the wind of them, and threw them into such disorder, that the victory, which was before doubtful, now manifestly declared in his favour.

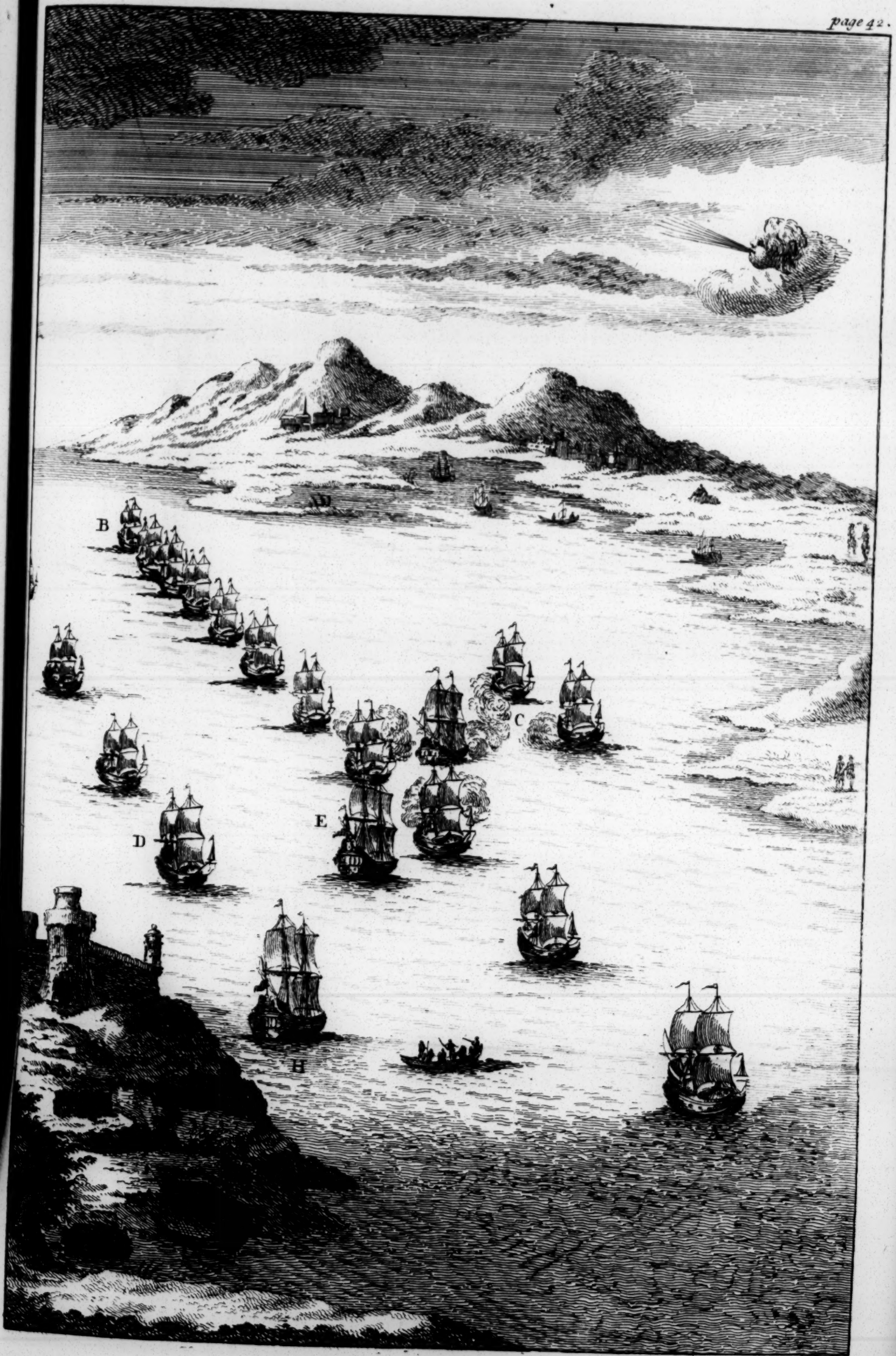
II.

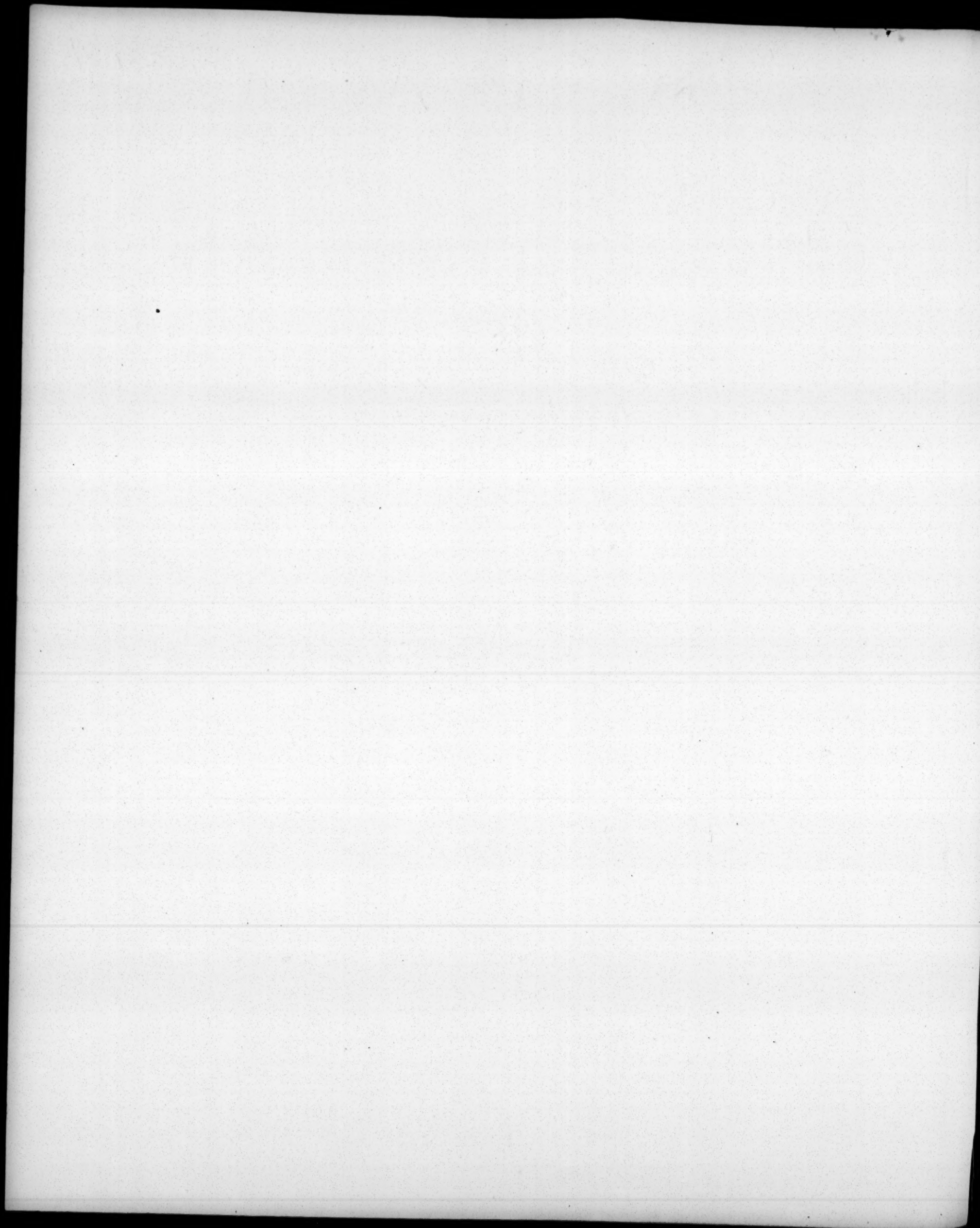
I should think it easy for the fleet to windward to hinder the enemy to leeward from forcing through their line ; which, whenever they attempted, the other fleet may tack at the same time all together, and thereby prevent them effectually from succeeding.

III.

I therefore cannot see, why we should be under any apprehension from a fleet that attempts to force through our line : I am even of opinion, that it should never be put in practice but in the following circumstances. Such as being sometimes obliged to it, to avoid







a greater evil ; if the enemy should leave a great opening in the center, and render part of your fleet useless ; or if a number of ships should be disabled, &c.

IV.

You are sometimes obliged to traverse the enemy's line to disengage some of your own ships, which may happen to be cut off ; in that case, you must boldly risk something, at the same time not to forget the necessary precautions. 1. To close your ships as much as possible. 2. To make all the sail you can, without waiting to attack the enemy as you force through their line. 3. As soon as you have got through you should tack again without loss of time, lest the enemy should stand on, upon the same tack with the ships that had broke through their line.

EXAMPLE.

Admiral de Ruyter put this sort of traverses in practice to the greatest advantage, when he beat the English fleet under general Monk in the year 1666, three days successively, on the north coast of England.

How to divide a fleet.

When a fleet consists of 60 sail of the line, the admiral divides it first into three squadrons, each of which has its divisions ; and three general officers : viz. admiral, vice-admiral, and rear-admiral. Each squadron has its proper colours, and each division its proper mast ; for example, the white flag is proper for the first squadron of France, the white and blue for the second ; and the blue for the third. In England, the first admiral of the fleet carries the union flag at the main-top-mast-head ; next the admiral of the white ; and then the admiral

of the blue. The particular ships carry pendants of the same colour of their squadrons, and at the masts of their respective divisions : so that the last ship in the division of the blue squadron, wears a blue pendant at the mizen-top-mast-head.

R E M A R K.

It may be so ordered, I think, that each ship in the fleet may be distinguished by means of a pendant and vane ; viz. The first ship of each division to wear a white vane at the main-top-mast-head ; a red vane for the second : a blue one for the third ; white and red for the fourth ; white and blue for the fifth ; and do the same at the fore and mizen-top-mast-heads. Thus you may have variety enough to know or distinguish fifteen ships of each division : you must only observe to have the vane somewhat broader than ordinary. So that when you see a ship carrying a white pendant at the mizen-top-mast-head, and a red vane at the main-top-mast-head, you know her to be the sixth ship in the third division of the white squadron, and consequently such a ship.

II.

The general officers, or commanders of divisions, place themselves in the center of their division. We must except the three commanding admirals, who, in a sailing position, lead their respective squadrons.

Where to place the fire-ships, &c.

In all forms of sailing, the transports, tenders, &c. are ordered to keep to windward, for the following reasons. 1. They are by such a situation more out of danger from the enemy, as they can the

readier bear down into the body of the fleet to avoid them. 2. They can more expeditiously execute the admiral's orders, when necessary. 3. They do not delay the fleet by waiting for them, being fitter to make sail before than upon a wind.

REMARK I.

This kind of ships ought not to keep farther than half a league, for the same reasons that they are ordered to keep to windward; but we must observe, that when the fleet is not drawn up in a line or three columns, the fire-ships, &c. ought not to be farther distant from the men of war, than they are from one another.

REMARK II.

The same reasons which prevail in placing the fire-ships, &c. to windward of a fleet in a sailing posture, will equally hold good, to place them to leeward, when obliged to make a retreat. 1. They are there in less danger from the pursuit of the enemy, because they are surrounded by the fleet to guard them, in the form of a half-moon, from any attack that may be made upon them. 2. The fleet going large in this form, these small ships may shorten sail to wait for orders. 3. If the fleet should be obliged to resume the line of battle again to engage the enemy, they will still be in the best position to sail in.

REMARK III.

In the order of retreat, the store-ships, &c. keep themselves at a greater distance than in any other form. 1. That they may not retard the

the progress of the fleet. 2. When the fleet forms again into a line of battle, they may keep better the proper distance required.

REMARK IV.

The fire-ships, &c. of the fleet to leeward ought to keep themselves a little a-head of those ships, whose orders they are to follow; to the end, that they may be the readier to join them upon occasion.

A fleet in a storm.

I.

A fleet, especially of large ships, ought never to keep out at sea in bad weather, unless obliged to it upon particular occasions: the many troublesome circumstances and ill consequences attending it are too obvious to need any explanation to those versed in maritime affairs.

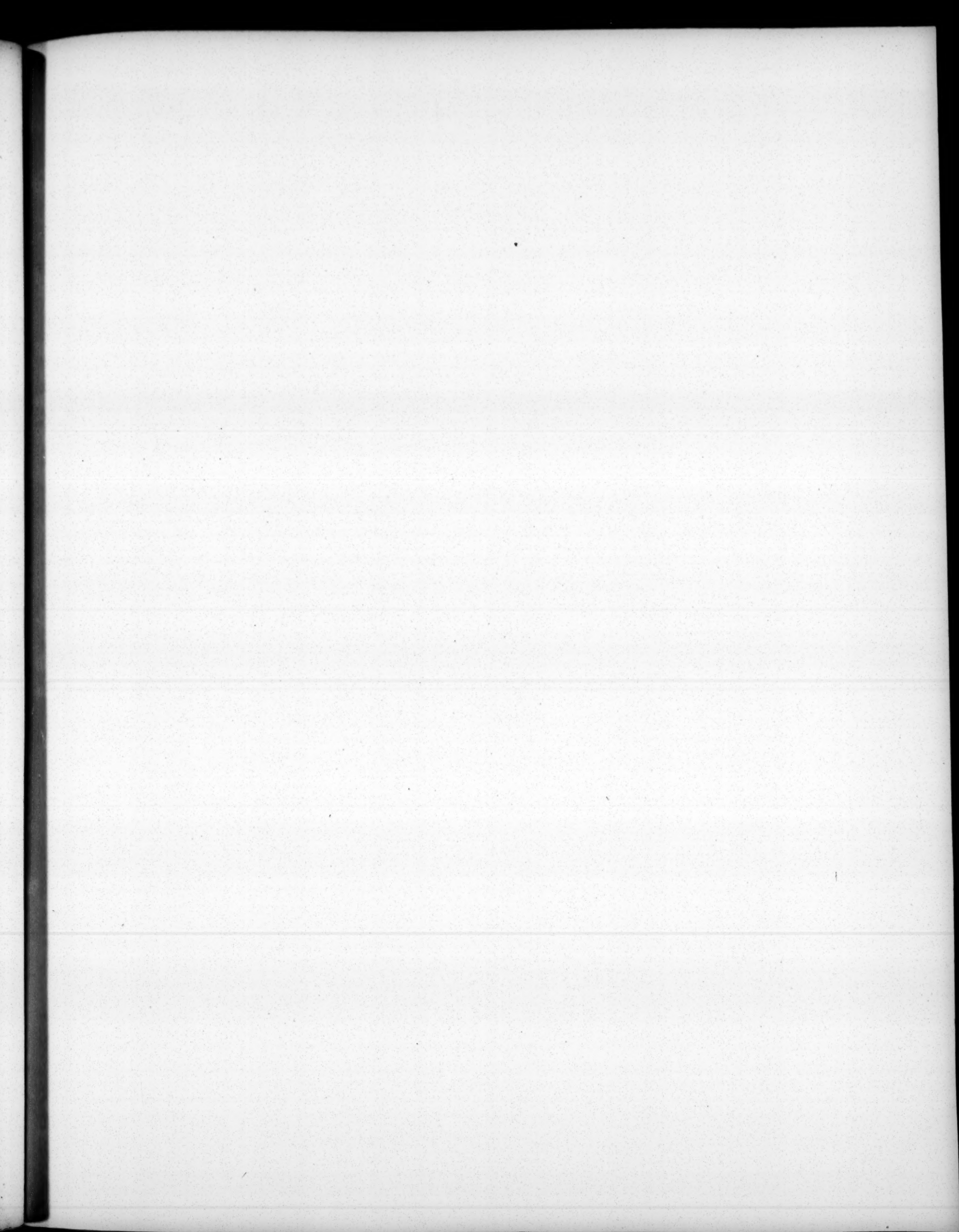
II.

However, it is more prudent for a fleet to keep the sea in bad weather, than to anchor on a dangerous coast; where they may run the risk of foundering, or being drove from their anchors, and have no harbour or bay to secure themselves in.

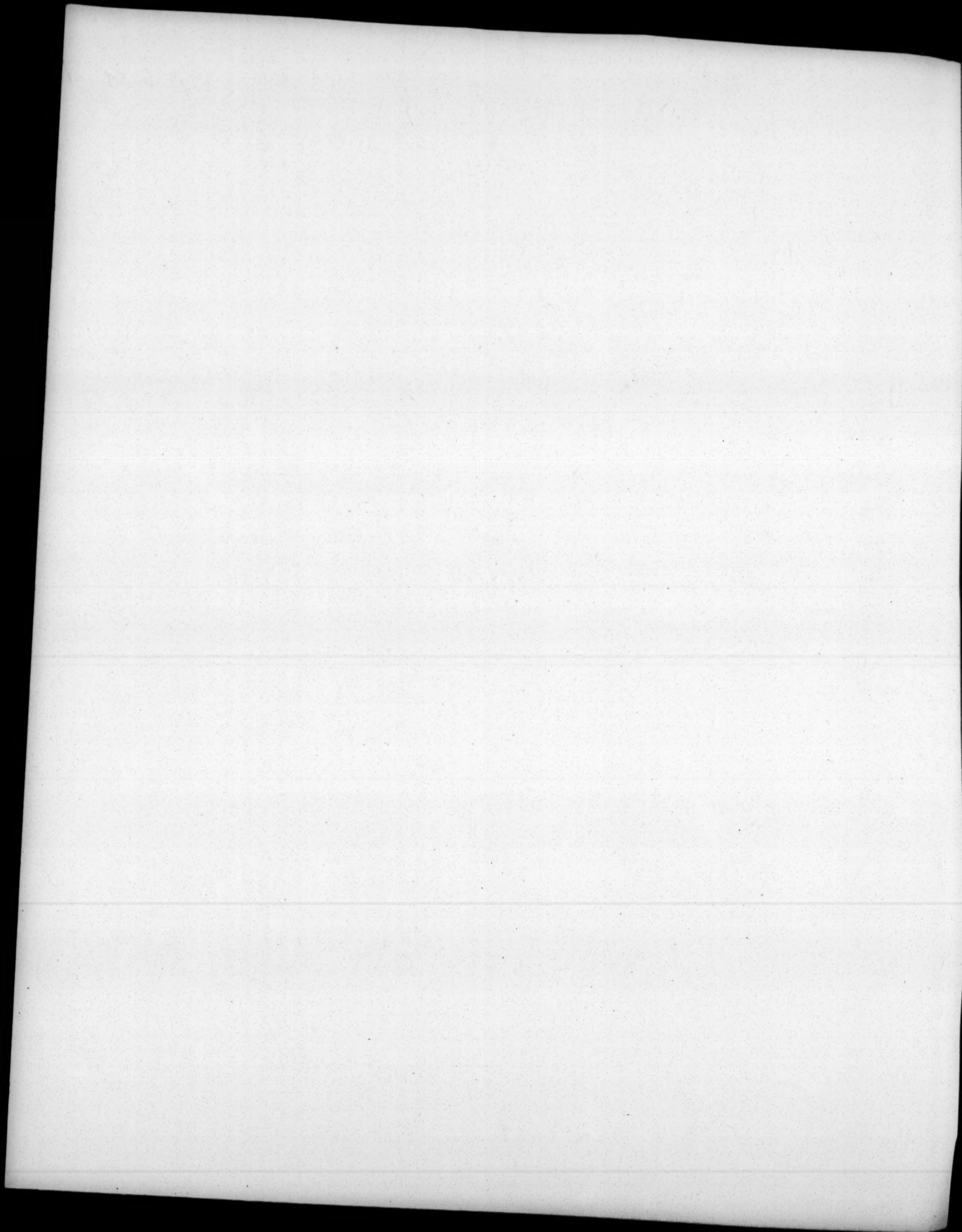
III.

When a fleet is under an absolute necessity of continuing at sea in bad weather; it should form itself into three columns, leaving a great interval between each ship, without widening at the same time the distance between the columns: so that it may be in this manner less liable to be separated, and the ships in less danger of falling on board of one another.

IV.







IV.

If the ships have a good offing and sea-room enough to drive, they will lay to under their ^{courses} ~~mains~~: which will subject them to labour less, and not strain so much on their masts, rigging, &c. but if they should not have drift enough, they must lay to under their main sails, or mizens only; which will still keep them much easier than if they were under no sail at all.

COROLLARY.

Hence we see how important it is to have always some port or harbour at command to secure the fleet in against any approaching storm or bad weather. The neglect of which necessary caution was of such fatal consequence, as to be the principal cause of almost the total loss and defeat of the Spanish armada, in the year 1588.

EXAMPLE.

History cannot furnish us with a more deplorable scene in the marine, than the loss of the armada of Philip II. king of Spain. This prince, having taken a resolution to make a conquest of England, had given orders to build 140 galleons and galleasses of a most enormous size, and supplied them with a vast number of warlike machines, and 2500 pieces of large cannon. They took on board about 30,000 soldiers and sailors, with the flower of the Spanish nobility. These ships of war were attended with a prodigious number of transports, store-ships, &c. with provisions and ammunition for six months. All Europe was in the utmost consternation to learn the place of destination of so formidable an armament; whilst the Spaniards vainly flattered themselves,

selves, they could not fail of success adequate to such mighty and astonishing preparations.

But, it is to little purpose to fit out great fleets and armies, without sending at the same time able and experienced generals to conduct and command them : the skill of the officers is of greater moment than the greatness of the ships, and the number of guns. Philip failed in this essential article ; he trusted the duke of Medina Sidonia with the command of his fleet, who had no knowledge in the marine, and took little care in the choice of either good sailors or able pilots ; not considering, that so material an oversight was the same as if he had sent his galleasses to sea without sails or oars ; for it is in vain to have them on board, unless they are managed with dexterity and address when required. The consequence of which was, that they began by making such gross mistakes in getting out of Lisbon harbour, that the fleet had like to have been lost before it had doubled Cape Finisterre. They entered the English channel with the wind at S. W. and by the 30th of June got the length of Plymouth, where they might have easily defeated the English, who lay there in disorder, unprepared to receive an enemy they so little expected. Ricalde, the lieutenant-general of the Spanish army, made use of every argument he could to persuade the duke of Sidonia to embrace so favourable a conjuncture ; but it requires no small talents to be able to take good council. The Spanish general overlooked such wholesome advice, and by that means gave the English an opportunity of following and annoying him in his course up the channel, and even of taking one of his galliots, that was disabled by falling aboard of one of his fleet. He anchored the 6th of August off Calais, where

where it was strongly remonstrated to him, that he should first make himself master of some port, to secure himself against a storm or bad weather, before he undertook any thing of moment ; it was likewise farther represented to him, that the coast of Calais could afford no shelter to so large a fleet to anchor on, but, on the contrary, must be exposed to too many dangers to remain there with any tolerable safety. He was, in short, inflexible to every remonstrance that could be made him, as he could not comprehend from whence those dangers could arise. The night of the 7th of August, the English, who had anchored with three small squadrons nigh enough to observe his motions, and harraß the Spaniards, sent ^{down} upon them eight fire-ships in a blaze ; they who had not forgot the infernal machines of the bridge at Antwerp, were so terrified, that, after having cut their cables, and crying out the fire of Antwerp ! fire of Antwerp ! they got under sail with such confusion and uproar as surpasses all imagination. At the same time, the sea rising with the wind brought on a dreadful storm, which, with the darkness of the night, and the consternation of the Spaniards, inexpressibly augmented the horror of the scene. Orders were no longer followed ; all was confusion, every body seeking refuge from whatever caprice or chance suggested to him. Some were drove by the wind upon the coast, where they were miserably shipwrecked ; others put out to sea, and separated themselves into several small squadrons : many fell on board each other, where, dashing one another to pieces, they were soon swallowed up in the bosom of the deep, where the melancholy shrieks of the crews were heard, notwithstanding the terrible roaring of the surrounding waves. The wind having abated a little towards morning, the English had a most shocking and moving scene

to behold of the horrible state of the Spanish ships ; which they attacked with so much the greater ease. They took, sunk, and destroyed a great number, without their having the power scarcely to resist them. There was only Ricaldo, Pimentel, Toledo, and Moncada, who having rejoined their admiral, made up a small squadron, and, with incredible bravery, withstood the force of the enemy ; but the weather coming on a-fresh soon parted them. Moncada with his galleas was thrown upon the shore at Calais, where, being attacked by a great number of English frigates, he defended himself like a lion, till receiving a musket ball in the forehead, he sunk upon a heap of dead bodies, that bravely fell in defending him. Toledo met with a happier fate ; for, seeing himself hard pressed in his galleon, which by this time had entirely opened, he jumped into his boat with some of the bravest of his crew, and made his way through the enemy, till he gained the shore, whilst the Dutch had boarded his galleon, which sunk under them. Pimentel alone fought a Dutch squadron for six hours, to which he at last surrendered with a great number of Spanish nobles. At length, the duke of Medina Sidonia, being sensible of his error too late, rejoined the melancholy remains of his fleet, and resolved upon returning to Spain by the north of Scotland ; but still to add more to his misfortune, he experienced to his cost, that those who have not a proper knowledge of the sea, will find it equally fatal at all times. The greatest part of the ships which accompanied him, perished on the coast of England and Scotland ; and he arrived himself almost alone in Spain, where he brought the most deplorable news, and the least expected, that was ever received in that country. Upon this occasion fire-ships were first made use of by Sir Francis Drake.

Of

Of SIGNALS.

Signals should be plain, clear and general ; that, is to say, should serve to express in the plainest and simplest manner, the intentions of the commanding-officer.

Signals are made by firing of guns ; by lights ; flags ; broad pendants ; and pendants : they are again multiplied by the number of guns, fired quicker or slower. Light-signals are multiplied by the number of lights, and by the several places they are shewn at. Flags or ensigns are multiplied by the mixture of the three different colours that are used at sea : which furnish us with a vast number of signals.

The method of signals.

When the admiral gives signals to his fleet, he begins by distributing them to each ship, each division, each squadron, and so on to the whole fleet : these signals are to signify his orders in the clearest manner without loss of time.

Signals of command by day.

For the whole fleet ; for each squadron ; for each division ; for each ship.

REMARK.

In this manner you may make at once the signal for three divisions, and for three ships of each division : and you may likewise make by means of one pendant only, the signals for three ships in each squadron, and of nine ships in the whole fleet : for example, when you

make the signal of the whole fleet, and that you hoist on the same mast a pendant at one of the most remarkable places of that mast, it will serve for a signal for nine ships, that have that pendant at the place appointed.

Rules to be observed in signals.

The signal of command serves to give notice to those, whom the admiral would have to observe his orders. They will answer it by the same signal, to signify to the admiral, that they take the proper notice of it; then the admiral will make the proper signal for them to follow.

Signals for chace and action.

To rally or return to action	—	{	A white and red flag under the flag-staff, at the mizen-top-mast-head.
To board	— — — — —		White and blue, at the same place.
To double the enemy	— — —	{	White striped with blue, at the same place.
To begin the action	— — —		Three guns, fired quick.

Signals of council.

		Ensign-Staff.
A council of general officers,	— — — — —	white and red flag.
A council of captains,	— — — — —	white and blue.
A council of commissaries or purfers,	— — —	red and blue.

R E M A R K.

The admiral may consult the commanders without losing the time
of

of coming on board him, by hoisting at the ensign-staff the following flags.

To engage,	— — — — —	white striped with red.
To cease firing,	— — — — —	white striped with blue.
To pursue the enemy,	— — — — —	red striped with white,
To retreat, or save themselves,	— — — — —	red striped with blue.

The commanders will answer, by hoisting a white pendant at the same place, for the affirmative, and a red pendant for the negative.

Signals for anchoring.

To stop with a stream anchor only.

To bring up with one of the bowers.

To speak with the admiral.

At the ensign-staff.

For a number of sick on board,	— — — — —	a white pendant.
That your ship makes water,	— — — — —	a red pendant.
Having water only for a few days,	— — — — —	a blue pendant.
In want of bread,	— — — — —	a white and blue pendant.
In want of wood	— — — — —	a white and red pendant.

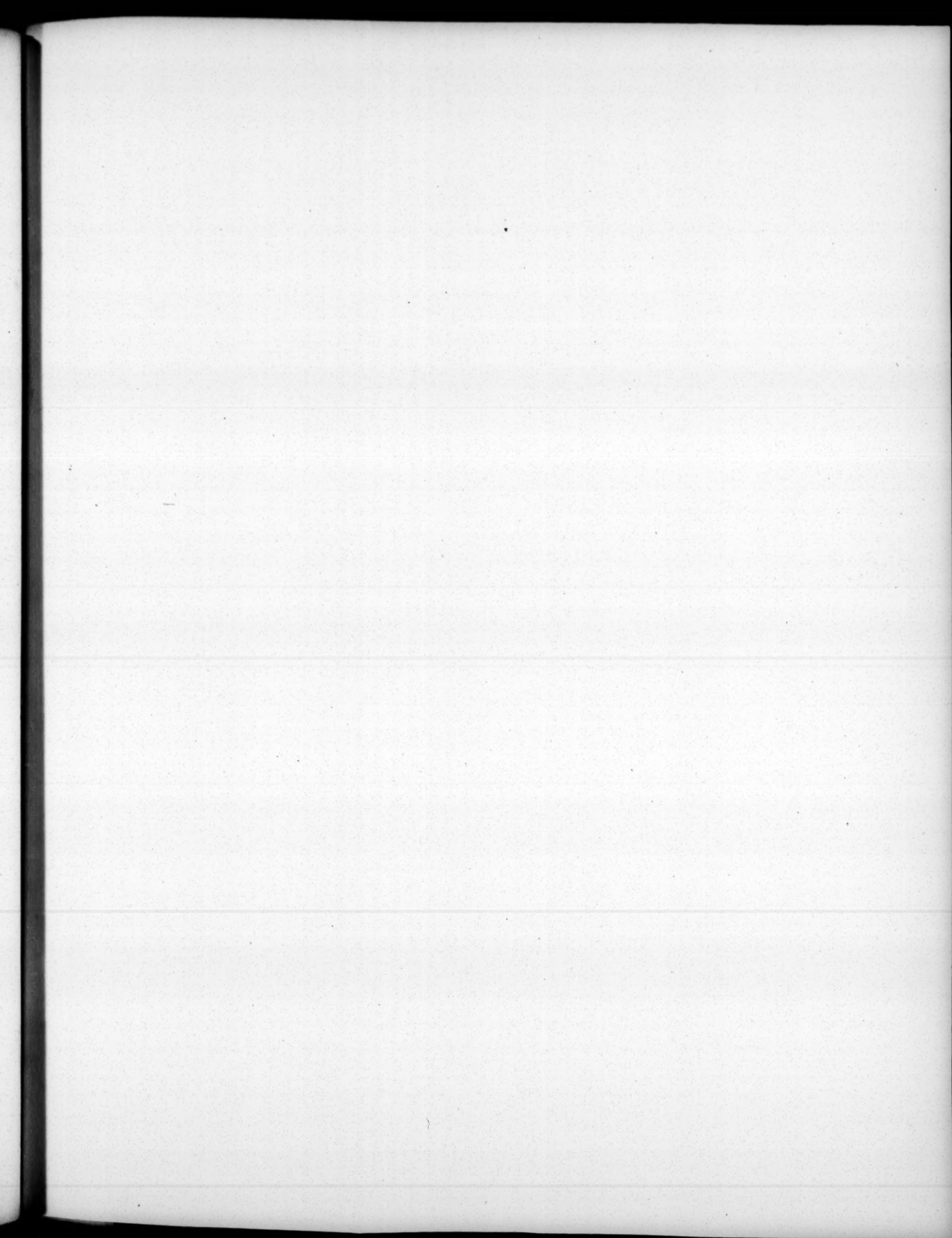
When the above captains or commanders shall have made the above signals, the admiral will answer them by the same; then the ships will bring to, and hoist their signal as often as may be thought necessary to express their wants. If the admiral is desirous of being informed of the state of any particular ship, he will signify his orders by the above signals.

A mixture of colours being very difficult to distinguish at any distance at sea, I should think that any particular colour, diversified with white, would make a signal more conspicuous at a distance, than such a confusion of checquered colours as are commonly used at sea.

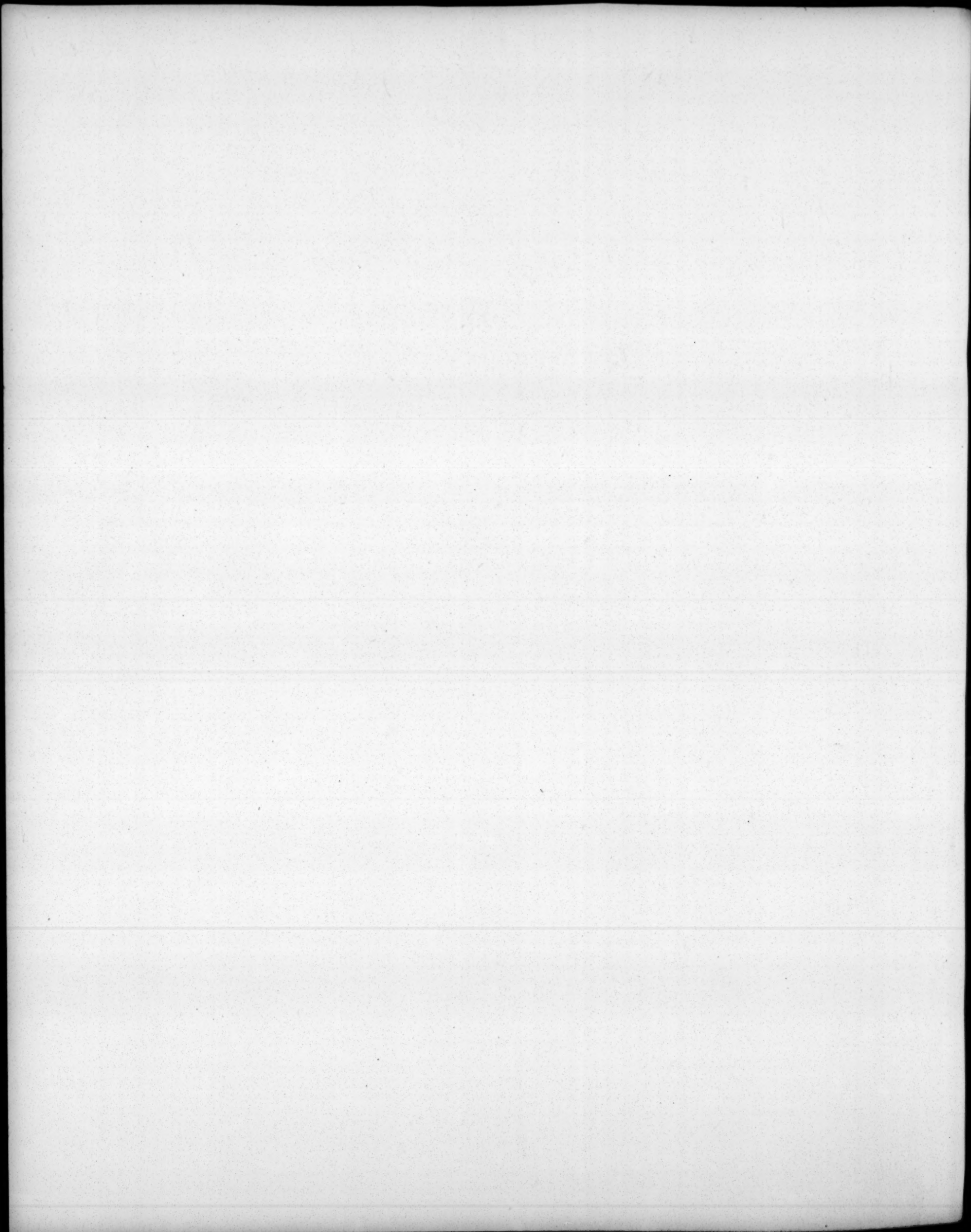
We have already a draught of 40 flags, varied with red and white only. Nothing can be more plain or simple; yet these 40 flags alone, or joined with an equal number of pendants, and fixed in different places, would form upwards of 10,000 signals, which would serve consequently to express so many different orders.

1. White.—2. Red.—3. Blue.—4. White and red.—5. White and blue.—6. Quartered white and red.—7. Quartered white and blue.—8. Quartered red and blue.—9. White bordered with red.—10. White bordered with blue.—11. Red bordered with white.—12. Red bordered with blue.—13. Blue bordered with white.—14. Blue bordered with red.—15. White pierced with red.—16. White pierced with blue.—17. Red pierced with white.—18. Red pierced with blue.—19. Blue pierced with white.—20. Blue pierced with red.—21. White faced with red.—22. White faced with blue.—23. Red faced with white.—24. Red faced with blue.—25. Blue faced with white.—26. Blue faced with red.—27. White with a red cross.—28. White with a blue cross.—29. Red with a white cross.—30. Red with a blue cross.—31. Blue with a white cross.—32. Blue with a red cross.—33. Red and white striped.—34. White and blue striped.—35. Dutch flag.—36. English jack.—37. White broad pendant.—38. Red broad pendant.—39. Blue broad pendant.—40. 1. White pendant.—2. Red pendant.—3. Blue pendant.—4. White vane.

SOME



<i>White</i> 1.	<i>Red</i> 2	<i>Blue</i> 3	<i>White & Red</i> 4	<i>White & Blue</i> 5
<i>Quartered white</i>	<i>Quartered white</i>	<i>Quartered red</i>	<i>White bordered</i>	<i>White bordered</i>
<i>and red</i> 6	<i>and blue</i> 7	<i>and blue</i> 8	<i>with red</i> 9	<i>with blue</i> 10
<i>Red bordered</i>	<i>Red bordered</i>	<i>Blue bordered</i>	<i>Blue bordered</i>	<i>White pierced</i>
<i>with white</i> 11	<i>with blue</i> 12	<i>with white</i> 13	<i>with red</i> 14	<i>with red</i> 15
<i>White pierced</i>	<i>Red pierced</i>	<i>Red pierced</i>	<i>Blue pierced</i>	<i>Blue pierced</i>
<i>with blue</i> 16	<i>with white</i> 17	<i>with blue</i> 18	<i>with white</i> 19	<i>with red</i> 20
<i>White faced</i>	<i>White faced</i>	<i>Red faced</i>	<i>Red faced</i>	<i>Blue faced</i>
<i>with red</i> 21	<i>with blue</i> 22	<i>with white</i> 23	<i>with blue</i> 24	<i>with white</i> 25
<i>Blue faced</i>	<i>White with</i>	<i>White with</i>	<i>Red with</i>	<i>Red with</i>
<i>with red</i> 26	<i>a red cross</i> 27	<i>a blue cross</i> 28	<i>a white cross</i> 29	<i>a blue cross</i> 30
<i>Blue with</i>	<i>Blue with</i>	<i>Red and</i>	<i>White and</i>	<i>Dutch flag</i> 35
<i>a white cross</i> 31	<i>a red cross</i> 32	<i>white striped</i> 33	<i>blue striped</i> 34	
<i>English Jack</i> 36	<i>White broad</i>	<i>Red broad</i>	<i>Blue broad</i>	<i>White pendant</i> 1
	<i>Pendant</i> 37	<i>Pendant</i> 38	<i>Pendant</i> 39	<i>Red Pendant</i> 2
				<i>Blue Pendant</i> 3
				<i>White Vane</i> 4



S O M E
A B S T R A C T S

F R O M

P. L'HOSTE'S Theory of the CONSTRUCTION
of a Ship, &c.

PART of his PREFACE.

IT cannot be denied, but that the art of ship-building, which is of so great advantage to a state, is the most undetermined and most imperfect of all arts. The best builders have seldom any regard to any other parts of a ship besides the two principal, the head and stern: from hence it proceeds, that the same builder, who builds two ships at the same time, and on the same plan often builds them so unequal, that we find their qualities entirely different.

Chance has frequently so great a share in the construction, that we see ships built with the greatest exactness and application often prove the worst; and those which are built without any strict regard to rules answer the purpose much better. So that the largest ships are sometimes the most defective; and we often find much better among the merchant ships than among the ships of war.

It is true, that within these few years, the French builders have endeavoured to bring their art to perfection. Some have begun by making plans,

plans, in which they have determined the several models or draughts of the fore and after parts of a ship; but as they want the necessary principles, they work with great uncertainty: their ships are not better than those which were built without the knowledge of either reading or writing; neither sail beter, nor bear so much sail, nor last so long. In a word, the builders in our days are of the same opinion with the antients, that what agrees best with the sea is yet undetermined.

I do not doubt but several able builders have flattered themselves they had found in the practice of frequent and repeated essays, what they have not found in theory; but I believe they have been disappointed in the success: a ship is too complicated a machine, and there are too many things must concur to render it complete, to leave its perfection to blind chance only. It very often happens in these cases, that, when artists design to make their work more complete, they spoil it by endeavouring to rectify what before constituted its perfection: besides, the greater the essay or model, the greater the expence, and when less, the faults or beauties become imperceptible. We must however allow, that trials and experience are the beginning of all arts, when the works are yet but simple and undigested; but when they become more intricate or compounded, we must have recourse to theory to develop that multitude of confused circumstances, which perplex the artists and lead them into numberless errors.

Of the figure of a ship.

I think the theory of ship-building should be reduced to the examination of three different things. 1. Those which determine the figure

the figure of a ship. 2. Those which determine or contribute most to her solidity. 3. Those which best facilitate her plans.

Of bodies in a medium.

The difficulty that a moveable body finds in dividing a medium, can be always expressed by the motion that the displaced mass of fluid requires to pass along the sides of the moveable body, from the place it takes up in advancing to that which it parts from.

PROPOSITION.

The difficulty that the moving body meets with in passing through a medium, increases in the same ratio with its velocity.

DEMONSTRATION.

The velocity of the moving body to increase is nothing else than the moveable to go through the same space, or to give the same motion to the parts of the medium in less time : therefore, the resistance and velocity of the moving body increase in the same ratio that the time decreases ; ergo, the resistance and velocity of the moveable increase are in the same ratio, q. e. d.

COROLLARY.

The resistance a polygon finds in dividing a medium, is equal to the product of the fluid displaced, by two thirds of the radius of the circle which is inscribed in it.

COROLLARY.

The circle finds greater resistance in dividing a medium with its
I plain

plane, than all other equal polygons ; and the triangle lefs. The fame of equal triangles, that which is equilateral finds greater refiftance in dividing a medium with its plane, and that which is fartheft from an equilateral triangle finds leaft.

Of the ftiffnefs of a fhip.

There is not a greater fault or danger to be feared in a fhip, than that of not being able to carry fail ; for you thereby often run the risk of being loft. You always endanger your masts in carrying fail, when it blows hard, in any fhip which has fo bad a quality ; and, when the masts lofe their perpendicular height, they ftrain on the fhrouds in the nature of a leaver, which encreafes as the fine of their obliquity.

A fhip that lofes her masts is in great danger of being loft, for which reason the builders neglect nothing that can make their fhips ftiff ; but the moft skilful rarely fucceed therein. Ships are frequently obliged to be girded or fheathed, to enable them to bear more fail, which is attended with this inconvenience, that it renders them heavier, and confequently the worfe for failing ; and likewise contributes to their decaying fooner, befides the great expence attending fuch expedients. You may make a fhip ftiff enough to carry fail, by ballafting her with lead or iron ; but then the danger is too great to be put in practice, for a fhip fo ballafted will labour much, and put you under continual apprehenfions of rowling away your masts, &c. an example of which happened to one of his majesty's fhips. The fhip being crank, the captain ftruck down into the hold feventeen pieces of cannon, clofe to the fhip's keel, which made her labour fo much, as to rowl away her masts, and fhe was loft.

SUPPO-

SUPPOSITIONS.

We suppose the ordinary rules of mechanicks understood, and in particular we make the following supposition. 1. The center of gravity of a body acts as if the whole weight of the body was there united.

COROLLARY.

To find the center of gravity of a ship you must find the center of gravity of the space it takes up in the water, and then you will have the vertical line, in which you are to find the center of gravity of the ship.

If you know the center of gravity of a ship, you may easily find her stiffness, or force to carry sail, which is nothing else than the product of the weight of the ship by the distance of the centers in the vertical line.

COROLLARY.

Ships that sail before the wind pitch but little, and commonly with less violence, because they sail faster.

If the center of gravity of a ship is farther forward, she will pitch the more.

DEMONSTRATION.

Because the weight of the ship is nearest the head, there must be greater force required to lift her forepart; and consequently she will ascend with greater celerity: likewise her weight will descend with greater swiftness and more force, therefore she will pitch more.

COROLLARY.

The whole art of stowing consists in placing the center of gravity as far aft as possible.

The weight of a ship retards her motion when she pitches.

Of a ship's pitching with regard to her bigness.

If a ship of the same figure, and continuing the same motion, is deeper loaded, she will notwithstanding ascend to the top of the wave.

DEMONSTRATION.

Since the wave raises the ship, notwithstanding her weight, it every moment communicates to her a motion greater than that of her gravity: therefore it communicates to her an acceleration in proportion to her weight; then every thing else remaining the same, the ship will rise equally above the wave, whether she is more or less loaded.

The same thing being supposed, the ship will pitch more in descending.

DEMONSTRATION.

Since the ship has a greater augmentation of weight in the same volume of water, she will have in repitching a greater acceleration; therefore, all the rest remaining the same, she will pitch deeper, q. e. d.

COROLLARY.

A ship which is deeper loaded should commonly pitch more: I say commonly, because the figure of the ship might be such, that when she is heaviest loaded she may pitch least.

COROLLARY.

Large ships generally pitch less than small ships, notwithstanding middle-sized ships are often surer at sea, and make better weather; because the heaviness of the great ships make them labour more in bad weather. Ships which are very sharp built commonly pitch most.

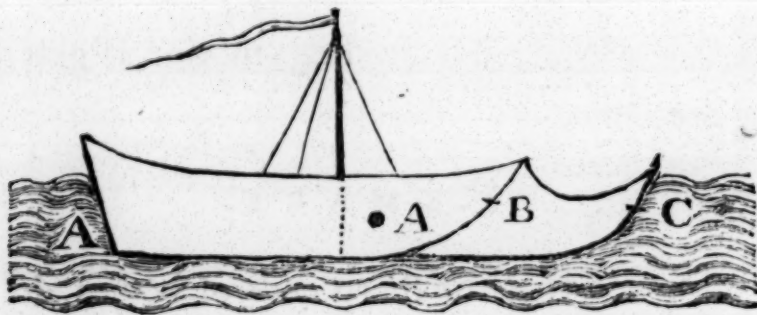
COROL-

COROLLARY.

The more elevated the center of the figure is, which forms the forepart of the ship, the greater power the wave has to raise her, and consequently she does not enter so deep into a wave, and she plunges less in repitching.

PROPOSITION.

Suppose the ship AB, whose center of gravity is the point A: every thing else remaining the same, and her forepart being prolonged to the point C, she will not enter so deep into the water.



DEMONSTRATION.

Since the weight A continues the same, and that the point C is farther from it, than the point B, the power applied at the point C will raise the ship with less resistance, than the power applied at the point B; therefore the wave will lift with greater facility the forepart C of the ship, than the forepart B; therefore the forepart C will not plunge so deep as the forepart B, every thing else continuing the same.

REMARK.

We suppose by the preceding demonstration, that when the wave lifts the ship, it elevates her fore-part with greater swiftness than it does the after-part, and consequently that the ship is like a lever, to which the
power

power is applied before, and whose fulcrum is in some part abaft, which is evident.

Rowling motion of a ship.

When the center of gravity of a ship is lowest, her rowling motion is more violent.

DEMONSTRATION.

Since the center of gravity is lower, it is farther distant from the center, about which the vibrations are made. Therefore it causes the contrary rowl of the ship to be more violent.

When a ship is heavier, her rowling motion is greater, every thing else remaining the same.

REMARK.

It is to be observed that the sharp ends of bodies do not contribute more to their dividing of the water : because experience teaches us, that a body penetrates and divides the water with less resistance, when the greater end thereof is pushed forward first. For example, the great end of a beam of a conick figure floating in the water, if you push forward the small end, it will go considerably farther, than if you struck the base thereof with the same force : for which reason, sailors take always the heel of a mast in tow ; and builders likewise build their ships with full bows and lean sterns, without doubt following the example of fishes therein, the swiftest of which are fuller before, and very slender behind. These considerations have confirmed people in their opinions, that the large end of a body, moving forward first, opens a passage, through which the rest slides with ease.

A N

A N
E S S A Y
O N

NAVAL MILITARY DISCIPLINE IN GENERAL,

By a late experienced SEA-COMMANDER;

With his Thoughts on Lines of Battle, Engagements between
Fleets, Single Ships, &c. to the greatest Advantage.

Qualities of a Ship of War.

A Royal ship should appear noble, magnificent, ~~and~~ easy : in order to which, I. She ought to stow or carry her stores, provisions, guns, and ammunitions completely. II. She must be roomy for her number of men, to preserve their health, and make life comfortable, with apartments convenient for officers, &c. III. She should be easy at sea, and at anchor. - IV. She should sail and work well.

The length of the keel and the breadth properly placed, affording a longer tangent at the water's edge, will make a ship answer the above qualifications, if her entrance be easy and not too sharp, nor her run too lean. For want of a long floor, ships often spring their bow-sprits,
2 &c.

&c. with a sudden pitch, by being too lean ; and the same reason often occasions their sending deep ; but a long floor, though a ship be lean afore and abaft, will make her easier, strain less, and last longer.

Of Rowling.

The body of water is heavier and stronger the deeper you go ; which divers do find, and is likewise agreeable to reason.

Therefore, I am of opinion, that the deeper the keel is, the more power the water has upon it. The motion of a ship, if I mistake not, that is the rowling motion, begins from a center at the keel, where the garboard strake or plank is let in ; if so, there is a motion below it to the depth of the keel as well as the motion aloft ; though, the keel has but little motion compared to the motion above : and the farther you are from the center, the greater is that motion, even to the spindle at the topmast-head, which makes the radius, and consequently the circle, greater, and so in proportion. The keel being entire, as the body above moves one way, the lower part of the keel moves contrarywise ; and the deeper it is, the more the body or circle of water is moved thereby. Is it not therefore demonstrable, that the greater the body of water is which opposes the motion of the keel, the greater is the opposition ? For if the keel had no motion from the center before-mentioned, or from the step of the main-mast, (which perhaps is more properly the center of motion) there would be no motion above it.

Of

Of firing great guns in platoons

In my opinion, grounded on what I have found by experience, to keep a constant fire on the enemy by firing in platoons, will have a much greater effect, and distress them more, than the common received notion of broad-side and broad-side with some intervals between, which is generally the case in most actions ; in order to which, I would divide the guns into five fires, in the following manner, viz. half the guns a-baft below, then half the guns abaft aloft, so the other half below forward, and lastly the quarter-deck guns, and those on the fore-castle ; so that by the time your first platoon is fired, you will be able to keep up a constant fire on your enemy, which method I prefer, as I observed above, to broad-side and broad-side ; where chance has often a greater share in the execution than judgment : notwithstanding, this last method is sometimes necessary, as time and circumstances may offer. I would likewise advise you to point your guns so as to make a breach in your enemy's ship.

To form a line.

The chief judgment of an admiral is to form his line in a proper disposition and strength from the van throughout to the rear ; in doing which, particular regard must be had to make the center strong ; for if that is forced, or broke through, the battle is looked upon as lost. Here it is to be observed, that, in a sea-action, the center is made the strongest, whereas in a land fight it is weakest ; and the wings of an army are strongest, lest the enemy, by forcing a wing, should have the advantage of flanking, and consequently putting the line in disorder : for the same reason also, the van and rear of a fleet is not put into confusion,

fusion, because care is taken to make them proportionably strong to resist the enemy : therefore the weakest part of the line will be in the quarters, supported each way from the center throughout.

The lines being thus formed, there ought to be a corps-de-reserve, as many as may be thought necessary, if they can be dispensed with. But, first your line must stretch out the length of the enemy's, if possible, or else they will have the advantage, and by tacking upon you put your van and rear into confusion.

Those ships in reserve may be ordered to fall in upon occasion, and will be of use to protect your fire-ships, bomb-vessels, &c. from any attempt of the enemy upon them : and from a ship in the center of reserve, signals may be repeated as the admiral makes them ; such ship being placed conveniently a-breast of the admiral's ship, where he can be best observed throughout the line, and consequently that ship's signals are better seen than those on board the admiral, which signals every flag-ship must repeat, as they regard those a-head or a-stern of the admiral in chief. Besides, the admiral will often send boats to the said ship, with orders what signals to make, in case his flag-staffs, &c. should be shot away.

The admiral, having given his fleet the line of battle and rendezvous, and ordered it to sea in quest of the enemy, will undoubtedly send his scouts out at proper distances and stations to make signals, or bring intelligence of the enemy, that he may prepare accordingly, either to receive, or go and attack them. He must likewise judge of

the wind and weather, the seas he may be in, whether convenient to attack or be attacked in ; as also the coast, to avoid being embayed, lest the enemy should surprize him at a disadvantage : but if by chance, or stress of weather, he is forced into a bay to anchor, or take in water, he will undoubtedly keep some cruisers out to bring him intelligence, that he may not be surprised, but be ready to cut or slip, if he has not time to weigh his anchors, and so put out to sea again.

Intelligence when good is of the utmost importance, either to avoid the enemy, or seek them out, according as they are superior or inferior to you. Thus we see how great the admiral's charge, care, and vigilance should be ; and, as all depends upon his conduct and experience, he is consequently answerable for the whole, since he is entrusted with the command of the fleet. At last intelligence is come to the admiral, where his enemy is, how situated, and how strong. Then he goes to attack them; if to leeward, he edges down upon them; and if to windward, he works up to them as soon as possible.

They will appear in form, no doubt, as, in all probability, they have their intelligence as well as the admiral. The signal being made for battle, each division, every captain crowds into his proper station, without loss of time : they endeavour to approach each other, till within point-blank gun-shot, which is near enough for a line of battle ; for if you should be too near, your line will naturally fall into a curve, notwithstanding all your endeavours to the contrary ; besides, you cannot so well observe your own line : the enemy may intercept your fight, especially if the line be long, which may cause a mistake

in the signals. It would be better for the contending admirals in chief, that each had a view of his own line, as well as of that of the enemy, in order to make proper signals, and, if any distress happen, to be the better able to relieve, or if any advantage, to improve upon it. But here again, I must digress a little, and observe to you which is best, the lee-side, or weather-gage, in a line of battle.

If I mistake not, the world allows the weather-gage to have the advantage ; though I have known some arguments in favour of the contrary side : however I shall endeavour to reason impartially on so important a point.

I.

The weather-gage is soonest clear of smok, and of course that line can better observe the signals that are made, than the ships to leeward can, which must have the continuance of both smoaks longer.

II.

Another advantage the weather ships have is this : if they are more in number than the enemy's fleet, they can detach some from their squadron, which bearing down upon the rear of the enemy must infallibly put them into disorder.

III.

Again, the advantage the fire-ships to windward have : they can (when orders are given) better bear down upon the enemy than those to leeward can ply up to windward, which can never be done against a line in action ; but the weather fire-ship can bear down against all the resistance that can be made by the enemy.

OBJECTION I.

Now for the lee-side, if one, two, or more of the ships to windward should be disabled, they will drive to leeward, and become a prey to the enemy. Most certainly this will happen, if ships and boats, (which of course will be ordered) cannot tow them up again, or other ships fall to leeward of them to cover and protect them; and, if not, the boats may take out the men, and then set the ship on fire, which let the enemy take if they will in a blaze: she must put them in disorder as she drives down upon them by endeavouring to avoid her, which, if rightly improved, will be an advantage to the weather enemy.

OBJECTION II.

Again there are who argue for the lee-line, and say, that if any of their ships should be disabled, they can be towed to leeward of them, and there be repaired and put into some order, and, if their line should be pressed, they can better bear away, and make a retreat than those to windward can, if it should be their case, and victory against them. This latter part of the question is readily granted, if the weather-line is so disabled, that it cannot keep its wind. It must be allowed, that if the ships cannot keep their wind, they must continue the engagement till they are lost with honour, or the chance of war turn in their favour.

The battle being begun, the fate of war decides the day. In a word, the success of all depends upon placing your shot well, and preserving a proper disposition in the line. There is one maxim, by which

which we should always be guided, that is, that bravery and resolution are absolutely necessary in the first sort of engagement, viz. between single ships; and conduct and bravery in the second sort, viz. that between two squadrons.

Conduct and presence of mind are chiefly requisite in a line of battle; for the admiral cannot be supposed to want bravery and resolution. It is then he must summon up all his knowledge and experience, to judge of the strength of his line; when and how to keep it as complete as possible, by ordering ships from the corps-de-reserve, or by changing ships from one part of the line to the other; or by detaching from one part of the wings, which may not be so much pressed to that which is. Here he must also consider the position of his enemy; his eye must be on him as well as on his own line from the van to the rear, and all should strictly mind the admiral's motions, signals, &c. Boats will in all probability, be continually passing from the ships to their flag-officers, if any thing extraordinary should happen, to acquaint them of it; and from the admirals or commanding-officers of each division to the admiral in chief, giving an account of the state and condition of each division, which will be a great satisfaction to him, as he will then be better able to judge how to assist where most wanted if occasion, or how to improve upon any advantage gained.

The battle drawing to a conclusion, it is easy to judge what the conqueror will do to improve his victory; as necessary a part of an officer as any in the action, as it requires great judgment and readiness
of

of thought; and the other in making his retreat should let slip no opportunity to save as many of his fleet as he possibly can. His eye must be quick, and his judgment and presence of mind as ready as at the first onset of the battle. He has no other resource left but in his escape, and this comfortable alleviation of his defeat, that a glorious retreat may gain him as much honour as the victory did to the conqueror.

Of seniority in a line of battle.

A line of battle should be formed so as to have a regard to a right disposition of strength, without any respect to seniority: otherwise the punctilio or place of a captain will be considered before the good of the service.

I mean this, when it happens that ships are not near alike or equal in force; for sometimes an older captain might happen to command a smaller ship, who will think it hard and irregular, that he is not placed as a second, or rather to lead the van, not considering that the center ought to be the strongest part of the line, and much stronger than the van upon either tack, if possible: and, in my opinion, when a commanding-officer does not make a right judgment of this, and that any miscarriage should happen through such oversight, his conduct is unpardonable.

If ships are near of a bigness, then seniority should be regarded, either by giving orders to the oldest captains to lead or be seconds; and if the word seconds be rightly understood, as it implies assisting, supporting, and defending the commanding-officer, the seconds have the post of honour. If the leading ship should be thought by some to
have

have the post of honour, why then does not the commanding-officer lead, and so on following one the other according to seniority? It is preposterous to imagine, that ships of war should be ranged in such form, one end of the line being stronger than the other; and equally absurd would it be, if the commanding-officer's ship should be supported by two small ships or frigates. As these considerations are, in my opinion, worthy an officer's notice, he will therefore take proper care that the line, if possible, be of equal strength throughout, still preferring the strength of the center; for whilst that is whole, the line cannot be said to be broken, though either end of it should be forced or disabled: but when the center is broke through, the line then is properly said to be broken, and put into disorder. And if the enemy's line is entire, they will easily conquer either end, or perhaps both of the broken line; to prevent which ought to be the part of an officer, to the best of his judgment in forming the line.

One question occurs to me upon this head, viz.—Admit a fleet of ships commanded by three flags, I ask, if the leading ships have the post of honour, why do not the two junior flags lead upon each tack as a guide for the commanding-officer to follow? To which I answer, the like was never known: the reason is obvious, for then the leading flags could not have their proper seconds, which are so absolutely necessary; and where there are three flags, there must be three divisions, each flag-officer in the center of his division, who chuses his seconds, according to their seniority, and each division having a leader upon either tack, according to the seniority of the next oldest captain; thus the line will be regularly proportioned throughout, nor does it follow, though I have

have said seconds have the post of honour, that the two junior flags should be seconds to the commanding flag-officers to make the center strong, as the flag-ships are supposed to be the largest ; if so, there could not be three divisions, and in a fleet, (which must be fifteen at least) there ought to be three divisions ; because sometimes a division might be ordered to tack to gain the wind of an enemy, as well as to give the two junior flags command and honour, by their share of division and rank : and where there are but two flags in a fleet, the oldest captain is chosen to have a division, as the youngest flag in every respect, that the line may be thereby regular and complete. This is what I have seen and learned in the course of my experience in the navy.

A maxim in sea-discipline.

That a commanding flag-ship should never go out of her way for any ship whatever, unless that ship should be disabled, or that a sudden shift of wind does not take her unexpectedly. The reason is plain : if the admiral gives way to one, or backs and fills for another's fancy or misconduct, there would be no end to such negligence or over-sight ; therefore the commanding flag-ship expects that every ship in his fleet will observe and take her motions from him and his seconds, whose distance from the admiral should be a measure for every other ship to follow from each other, as near as possible, except when the signal is made to back or fill, or make more or less sail.

The seconds to the commanding flag-ship are particularly to regard her, to move as she does, whether the other ships do or not, or can not do ; for they are called seconds to guard and attend the admiral's

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ship.

ship. It is the part of every officer, as soon as the signal is made for the line to crowd if possible into his station, and not lay, through indolence, braced to or a-back, but make sail to windward, or bear away to leeward, in order to form the line immediately, and then each leading ship to mind her tack as the wind is, to lead and give room.

The commanding flag-officer, when his ships are formed into a line, observes the enemy throughout, the strength of their line, and acts accordingly, either in backing filling, making more or less sail, or what motion he might think most to his advantage. He is not to take his motions from his leading ship, but upon some particular occasion, signal, notice, or message, sent to him.

Of a convoy.

A squadron of men of war commanded by commodore Edwards, consisting of three 80 gun ships, and two of 50 guns, with a great trading fleet under his convoy, was followed by the famous Du Gué with ten or twelve sail under his command from 30 to 60 guns, crowding all the sail they could, and preparing to attack him. Upon sight of which, the commodore immediately drew up his ships into a line upon a wind, and lay to in the rear, viz. a-stern of the fleet of trade, waiting for the enemy : but his misconduct was to lay muzzled, viz. with his head sails to the mast ; the trade continuing its course, and crowding away a-fore the wind on their voyage.

The enemy came on boldly, and boarded the commodore in an eighty gun ship, with the two largest of their ships. The two fifties
were

his seconds, but taken no notice of by the enemy, nor the other two eighty gun ships in the van and rear, for they were resolved to take the commodore first; who lost his bowsprit and foremast, himself being wounded, and his ship soon mastered by the enemy, as were the two fifty gun ships. Upon this, the two eighty gun ships put before the wind, that is to say large, as their fancies guided them, wide of each other, (surprising I own!) making a running fight of it with some of the enemy's ships. One of the eighty gun ships blew up by some accident of their own, and but five men were saved; but the other got clear off. She could not be so easily boarded; besides, being a lofty ship to the enemy, and going away large, under a commanding sail, intimidated them from any attempt of that kind.

I shall now reason from the circumstances and situation of the whole affair; that of the enemy, convoy, and trade.

I.

That the commodore was right to fall a-stern of the fleet is most certain; and the trade to croud away was as right, the wind being fair; and so was the enemy in their manner of attack, considering the position they found the squadron in, viz. muzzled. Though, by the bye, they depended more on their numbers, than on a regular method of attacking.

II.

The commodore should not have lain muzzled; and if he had thought proper to have kept upon a wind to divert the enemy, (whilst the trade continued on their course with all the sail they could make,) he should have kept his ships under way with a commanding sail;

then his enemy would have been obliged to have attacked him in a more regular manner ; and he would have been able to have made a more warlike defence, as their attack was all resolution, depending entirely on the number of their ships.

III.

In my humble opinion, as the enemy approached the commodore, he ought to have placed his five ships right before the wind, abreast of each other, under a very easy sail to give the trade time to crowd away ; and in this posture keeping close together, to follow leisurely.

OBJECTION I.

The enemy, you may object to me, crowd up ; agreed ; but they will not venture to board either of the eighty gun ships, being lofty, which are of the off-side of the line of breast, and under way too ; they will not attempt to force in, nor can they, between the ships when close together : they must be only content to range up along side, fire, and fall a-stern to load again, or give way to another ship to do the same. I must own by repeating this often, two sixty-gun ships might do a great deal of damage to an eighty gun ship ; or one sixty gun ship upon her bow, and the other upon her quarter, would embarrass her greatly ; and this they could have done, as the commodore lay under an easy sail to favour the trade to push on. A sixty gun ship cannot lay long a-broad-side of an eighty gun ship singly ; it is too warm work, considering the difference of metal, and the strength of the ships. They will not attempt to board an eighty gun ship under way, and lofty besides, and the fifty gun ship might at the same time, not only assist with men, but likewise annoy the enemy out of their tops, and do

do the boarding ship much damage : they would not run the risk of laying him a-thwart hawse, though they outfail him. It would be too great a hazard ; and if they should divide themselves, half on one side, and half on the other, the commodore should in such case draw up his line a-head of each other, and resolve to keep the enemy separated, and as warmly as possible press hard upon one of their divisions : for the commodore by acting so would have been stronger than either side of the enemy, and thus he might have fought with advantage and honour to himself and country.

OBJECTION II.

You may perhaps still object to me, that a line of the enemy on one side, and another on the other, would greatly puzzle the commodore how to resist them, not having men to man both sides of his ships guns at the same time. In answer to which I say, the enemy would not be fond of engaging him in that manner, because his shot may hurt his friends masts, yards, &c. but, even if he should do so, the commodore may man his heaviest guns, and use his utmost efforts to sink his enemy, by firing between wind and water, or pointing so as to meet in a breach of his enemy's ship. The enemy are full of small arms, and use them much ; but if he could place a shot between wind and water, he would soon oblige them to sheer off. Thus he should have acted, and not to have lain muzzled ; and if the ships were to be taken by numbers, they would have been lost with honour and bravery.

Conduct

Conduct in a retreat.

The admiral who is conquered must consider whether he is to windward or to leeward, and what is immediately best to be done, employing his gallies, (if any,) and when they accompany a fleet, they are of infinite service to take out the wounded, putting fresh men in their room; towing disabled ships, or preventing fire-ships. In flying or retreating, consider the uncertainty of the weather: the wind may shift in his favour, or it may fall calm; that is, all means are to be used and hoped for rather than despond, and suffer himself to fall a prey to the enemy easily. He should judge likewise of the time of the day; the night may favour him. He must likewise consider if he is nigh the shore, which he should rather run upon, if possible, than be taken afloat; otherwise he adds so much strength to the enemy by so many as he takes under sail.

You must observe, it is policy in war, in case a few ships of the enemy should by a leak, disabled masts, &c. bear away out of the line, or that their van should bear away, yet your van, or ships that disable those of the enemy, are not to follow, till the center of their fleet bear away also. There may be a design in them to alter your line, and they propose to themselves some advantage thereby; but, if you should perceive their van or rear is forced to retreat, then double your efforts in pursuit of them, by closing your line, that is to say, the center, to press hard upon the enemy's center, in order to compel them to bear away as well as the rest of their line.

Admiral's

Admiral's post in action.

The captain general of an army chooses always to be on some rising ground, convenient to take a view of the battle, having his aids de camp around him, and his corps de reserve ready to be dispatched with orders to succour upon occasion, or he himself, in desperate cases to advance and rally his flying troops ; but the captain general of a fleet must always be in the heat of action, though attended with some inconveniencies ; such as his thoughts being ruffled by the noise of the cannon, continual clouds of smoak, &c. as well as being often interrupted from seeing his line throughout as distinct as he could wish : therefore, some are of opinion, as the admiral's courage cannot be doubted, he should be in one of the ships of reserve, though his flag may continue flying aboard his proper ship in the line ; but, in my opinion, he cannot see from his corps de reserve both lines distinct enough, to form a right judgment of the condition of each line, which he should endeavour at as much as possible : all that can be said upon the whole is, that his adversary-admiral is in the same situation a-board of his ship in his line : the only difference is, that the weather admiral is sooner clear of smoak, by the addition of both smoaks on the lee-line.

The land-officers rightly judge too of advantages in forming their lines for battle, by observing the ground, the woods, rivers, morasses, &c. so as to make them of use against the enemy. They can march and advance, let the wind be as it will, but a fleet must have open sea-room to form its line, with proper wind and weather ; and therefore

fore, I must own, have seldom occasion for stratagem or resource in the course of their expeditions, &c.

Of attacking forts.

Though ships were not designed at first to batter stone-walls, yet they have often had success against them : but still it is not easy to reason or direct in such sort of engagements, so many accidents happening, which frequently hinder ships from placing themselves properly to attack batteries or fortifications, such as contrary winds, tides, currents, shoals, &c.

But if you design with a fleet to force into harbour, (wind, weather, &c. permitting,) you should order some ships to divert the out-forts by coming to an anchor, and placing themselves in such a manner as to bring their broad-sides to bear upon them ; I must own when that is accomplished, a ship's fire being quick, will very much annoy the enemy, but more especially against stone-works, (which fly about, and do great execution,) whilst the main body of the fleet pushes into harbour : but, as there is no degree of equality in such sort of engagements, I shall not reason any farther upon them, and only say, that I have seen various success on both sides.

Of boarding.

An officer should well consider, and weigh the danger and consequence that attend boarding a ship, before he attempts it ; and to be pretty certain that his adversary is thin of men : for perhaps he wishes to be boarded ; if so, great slaughter must ensue.

Before

Before you board, you should judge of you own strength as well as that of the enemy ; the sea must likewise be considered, lest it may endanger your going both to the bottom. Ships of equal force ought not to be fond of boarding ; there must or ought to be a superiority in the boarding ship, which when they do attempt, it is more adviseable to lay the enemy's ship a-board on the lee-side, especially if there be any swell or sea, as the water is there the smoothest : besides, in laying a ship a-board to leeward, if you find too warm a reception, you can better get clear and stand off from the enemy : this is the only advantage, in my opinion, of being to leeward ; but as I think the weather ship (at most times) can be to leeward when she pleases, (which when she designs to be, she will at the same time endeavour to rake her adversary in crossing a-thwart his stern,) it is more eligible to be to windward. This, if she can once effectually do, she must in all probability conquer her enemy ; and the same if she can lay him athwart the hawse, which both will endeavour to avoid, if either sees the other attempt it. Alertness and judgment are absolutely necessary in boarding, managing your guns, &c. I would not advise you to depend on broad-side and broad-side, for that often fails of the desired effect : rather dispose your guns so as to fire in platoons, if possible, by which means you will be better able to keep up a constant fire on your enemy, and consequently perplex him, and intimidate his men more, than by the common method of broad-side and broad-side, which occasions some respite or intervals between : for when you fire all, you must take some time to load again, when perhaps your enemy may keep a constant fire upon you ; in that case you must be the mark for a time, and vice versa.

I have been in action, in which the brave enemy, to do him justice, held out for three hours and an half, though inferior, but that we could not know, it being in the night, though the moon was up and smooth water, and the enemy right a-fore the wind.

When we came up with her, we found her to be the Hazardous of fifty-four guns. My captain, (afterwards Sir John Norris) in the Orford of seventy guns, thinking the time long, and being eager to conquer, resolved to take her at all events: we shot up along-side of her, so as nearly to touch yard-arm and yard-arm, at the same time pouring in a broad-side of great and small shot; then preparing to board her, we made such dreadful carnage and slaughter, as immediately obliged the enemy to strike, and call out for quarter. So here you see, the officer and seaman shewed what was proper to be done, when down-right cannonading did not altogether succeed.

C O N C L U S I O N.

The Delphian oracle being consulted by the Athenians, on the formidable armament and innumerable forces of Xerxes, returned for answer, "that they must seek their safety in wooden walls." To which I may affirm, that whenever this nation in particular has recourse to her floating bullwarks for her security and defence, she will find strength, wealth, and glory, to be the happy and infallible consequence.

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G E N E R A L I D E A
O F T H E
A R M A M E N T
O F T H E
F R E N C H N A V Y.

IN all countries ships of war are the most considerable. In France, by two ordinances of Lewis XIV. in 1670, and 1689, they are divided into five ranks, or rates. This distinction is founded on their length, their number of decks, ports, and the guns they carry.

The length of the keel of a first rate is about one hundred and sixty-three feet, her breadth forty-four, and depth about twenty-feet four inches ; they have three decks ; burthen about fifteen hundred ton, (eighteen ounces to the pound,) and mount from seventy to a hundred and twenty cannon. This is the common establishment of a French first rate man of war : formerly they built them larger.

Ships of the second rate have never less than one hundred and five, nor more than a hundred and twenty, feet keel, burthen from eleven

to twelve hundred tons. They have three entire decks, sometimes the third is cut. Their number of guns never exceeds seventy, nor is less than fifty-six.

About a hundred and ten feet keel, eight or nine hundred ton, forty or fifty guns, and two decks, determine those of the third rate. Ten feet less in the keel, three hundred ton less burthen, and ten guns less, but with the same number of decks with the third rate, make all the difference of a fourth rate.

Ships of the fifth rate are still less. They have but ninety feet keel : burthen three hundred tons ; carrying from eighteen to twenty guns, having two decks like the third and fourth rates.

The regulation of cannon on board the French men of war.

The French ships, according to their rate and rank of the officers that command them, carry their guns of brass or iron in proportion. In consequence of an ordinance in the year 1689, all ships of the first rate are to carry brass guns, without any respect to the officers that command them ; those of the second rate, commanded by the admiral, vice-admiral, or a lieutenant-general, have all their guns likewise of brass ; but, if commanded by a chef d'escadre, (commodore) they carry two thirds of brass, and one third of iron. If a captain commands either of these rates, they are to carry one half brass, and the other half iron cannon. Ships of the fourth rate carry one third brass, and
two

two thirds iron. In fine, those of the fifth rate carry three fourths of iron, and one fourth of brass cannon. The frigates and other small ships carry iron guns only.

The number of men.

As to the number of men they carry on board their men of war, they are not fixed or limited. The Scepter, a ship of eighty-four guns, in Monf. de Pointis's squadron, in his expedition against Carthagene, carried six-hundred and fifty men. The Frederick of eighty-four guns, in 1667, carried but five hundred and fifty men ; but latterly they carry more. A seventy-four gun ship now carries seven hundred and fifty men.

The rank of the French officers.

The first officer of the marine is the admiral ; he is the chief of all naval armaments, and of the maritime police. This title was not known in France, during the first and second race of her kings. The chief officer belonging to the sea was called overseer, or *prefectus maris & littoris* ; he was afterwards called captain of the sea, and of the fleet. However, this dignity has been kept up and supported through many successive reigns, till the year 1683, when the count de Toulouse, (who was the fifty-eighth admiral) was invested with that post ; which is at this time maintained with the greatest splendor and respect.

The admiral has under him his vice-admirals, who represent him, and who have the second post at sea ; they are general officers, and

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there are two in France. The one commands in the western ocean, whilst the other performs that function in the Levant, or Mediterranean. When he is at sea, he is saluted by the rear-admiral, commodore, and captains of private ships. The Dutch call them lieutenant-admirals.

The second officer is the rear-admiral. This post is but temporary and occasional in France, and subsists only during some grand armament. He commands the rear-guard, or last division of the fleet, and it is the oldest chef d'escadre who performs this duty. In Holland, as well as in England, the post of rear-admiral is fixed, and has the third rank in the marine.

Under the vice-admirals, the lieutenant-generals command the fleet. They precede all commodores, and give them orders, which they distribute to the inferior officers.

A chef d'escadre is a general officer, that commands a squadron, detachment, or division; he carries a white broad pendant, at the mizen-top-mast-head, when in company with a fleet; but wears it at the main-top-mast-head, when commanding in chief. By a declaration of the king in 1691, it was ordered, that the chefs d'escadre should bear the rank of marechals de camp in the army, and their appointment or pay be six thousand livres a-year, and their table.

Subordinate to the chefs d'escadre are the captains of ships. A captain is an officer, who has his commission from the king to command

mand a ship, and has the rank of a colonel. His pay is about two thousand livres a-year, and his table.

The next who commands in the absence of the captain, is the lieutenant, who has a thousand livres a-year, and his table: he, with the rest of the commission officers, and guard de marines (midshipmen) eat with the captain, defrayed at the king's expence. He ranks with a captain of foot.

In the absence of the lieutenant, the ensign commands. His duty is the same with the lieutenant, and his rank the same. His appointment is six hundred livres a-year.

According to the establishment of Lewis XIV. there are always on board the flag-ship the following officers, besides the commander in chief, two captains, two lieutenants, and two ensigns. The same number on board ships of the first rate. On those of the second rate, captain, two lieutenants, and two ensigns. In fine, on those of the fourth and fifth rates, a captain, one lieutenant, and one ensign.

Besides these officers, there are captains of frigates, galliots, fire-ships, and fly-boats. These captains are called, captains of the lowest class. (*Capitaines du petit etat.*)

There are always sixty thousand sailors registered in the sea-ports and on the coasts: twenty thousand of which serve on board his majesty's ships, twenty thousand on board the merchant ships, and twenty

ty thousand remain on shore. This wise regulation of Lewis XIV. was thought to be of so great utility and glory to the nation, that a medal was struck upon the occasion in 1680, with this device, a sailor on the sea-shore supporting himself on a broken pillar, holding in his hand a rudder charged with flowers de luce. The legend of this medal was, *Bello & Commercio*, (both for war and commerce;) and on the exergue: *Sexaginta Millia Nautarum Conscripta*. (Sixty thousand sailors registered.)

In the great ships that go long voyages, the French carry three pilots on board. According to the rate of the ship, they are allowed one or two, in consequence of the king's ordinance of 1681 and 1689.

Such is the establishment of the most considerable ships in France; formerly they called their ships of war by the name of galleons, which had three or four decks. That name is now no longer in use but with the Spaniards, which they give to their ships that are destined for their West-India voyages. These ships, which are of a large size, have always four decks. They give likewise the same name to greater or smaller vessels, that go yearly to la Vera Cruz. The Portuguese have ships they call *Caraques*, somewhat resembling the galleons, which they send to India and the Brazils.

After the ships of war, the largest ship is called a galleasse, which is a kind of ship of one deck, and three masts. They are made use of by the Venetians only. They have thirty-two banks of oars, with six or seven slaves to an oar; three batteries of guns from
thirty-

thirty-six to twenty-four pounders ; in the prow, two pieces of cannon, and two batteries on the poop, of three pieces of cannon, eighteen pounders, their complement of men consist of a thousand, or twelve hundred. To see one of these galleasses at sea, she appears like a great floating island, able in appearance to encounter with twenty galleons. The Turks have ships not unlike them, which they call Mahones.

In France they have gallies. They are a kind of low flat built vessels with one deck, that both sail and row, and are from a hundred and twenty, to a hundred and thirty feet long, eighteen feet broad, and nine or ten feet deep. They have two masts, which can be struck at pleasure, two latine sails, and five pieces of cannon. The gallies have commonly twenty-five or thirty banks of oars of a side, to each of which are chained five or six rowers, or slaves.

There are no gallies now but in the Mediterranean : they generally keep close along shore, tho' they sometimes venture out to sea for a short cruize. In 1690, there were fifteen built at Rochfort, on which occasion a medal was struck with the plan of the city or port of Havre de Grace, with a galley entirely rigged ; the legend of the medal was, *Portuum Securitas* : (the defence of the port) the exergue, *Quindecim Triremis in Oceano*, 1690.

As to frigates, they are light nimble ships built for sailing. Formerly the name of frigate was only known in the Mediterranean ; a

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name

name given to a kind of long vessels that they made use of in those seas, and went with sails and oars. The English were the first who appeared on the ocean with these ships, and fitted them for action as well as sailing.

Fire-ships are little used by the French ; they are generally some old vessels filled with proper combustibles, and materials to grapple, and set the enemy on fire.

F I N I S.

19 JY 64

SHIPS lost by the ENGLISH during the present War.

SHIPS NAMES.	GUNS.	How Lost.
St. George	90	Burnt in the Bay.
Ramillies	90	Lost off the Start.
Invincible	74	Lost at Spithead.
Resolution	74	Lost in Quiberon Bay.
Effex	64	Ditto.
Warwick	64	Taken. — Retaken.
Mars	64	Run a-shore at Hallifax.
Tilbury	64	Wreck'd off Louisbourg.
Duke of Aquitaine	64	Foundered off Pondicherry.
Sunderland	60	Ditto.
Greenwich	50	Taken.
Litchfield	50	Wreck'd on the Coast of Barbary.
Harwich	50	Run a-shore in the West-Indies.
Newcastle	50	Foundered off Pondicherry.
Queenborough	20	Ditto.
Winchelsea	20	Taken. — Retaken.
Hawke Sloop	14	Ditto. — Ditto.
Virgin Sloop	10	Ditto. — Ditto.
Protector Fire-Ship	—	Foundered off Pondicherry.

Errata.

Page 7, line 5, read, to Windward.—Page 7, line 15, read, whom she would willingly join, —Page 8, Line 19, read, The fleet AB are to leeward. and the fire-ships FF are to windward of their fleet CD.—Page 14, line 12, read, Amongst the men.—Plate fronting page 17, The line H should be continued to the bottom, and marked I.—Page 26, line 8, read, great genius.—Page 26, line 19, read, deficiency.—Page 27, line 18, read, birth.—Plate fronting page 37, The letters C, and A, were omitted at the head of the two lines of the ships.—Page 40, line 3, read, inferior fleet AB.—Page 40, line 4, read, the center E.—Page 40, line 6, read, intervals E.—Page 47, line 2, read, their courses.—Page 49, line 11, read, sent down upon them, &c.—Page 63, line 1, read, magnificent, easy.



A GENERAL STATE of the FRENCH NAVY,

At the Beginning of the YE AR One Thousand Seven Hundred and Fifty Five.

Those marked thus * are taken.

Those marked thus † destroyed.

Those marked † lost by accident.

SHIPS NAMES.	N ^o of Guns	N ^o of Men	Weight of Metal		Length		Breadth		Depth		Where built.	Age	Where and when Taken or Destroyed.
			C.	lb.	Ft.	In.	Ft.	In.	Ft.	In.			
Royal Louis	120												
Duke de Bourgoigne	80	800	36	18	174	44			21		Rochfort	1751	
Formidable *	80	1000	—	—	177	44	10		21	6	Brest		Taken by Sir Edward Hawke's fleet in the bay of Biscay, Nov. 20, 1759
Foudroyant *	80	800	—	—	173	46			23		Toulon	1750	Taken by the Monmouth of 64 guns, Capt. Gardner, (killed) in the Mediterranean, Feb. 28, 1758
Ocean †	84	950	—	—	175	7			22	6	Ditto	1756	Burnt by Admiral Boscawen's squadron in Lagos bay, Aug. 19, 1759
Soleil Royale †	80	1200	36	24	183	3	48	6	23	1	Brest	1749	Ditto by the French admiral, to avoid being taken by Sir Edward Hawke near Croisie, Nov. 21, 1759
Tonant	80	800	36	18	171	46	1		23		Toulon	1743	
Algomquin	74	800	—	—	160	44			21		Canada	1753	
Orient	80												
Bien Aimée ‡	74												Lost in the East Indies, April 28, 1758
Centaur *	74										Toulon	1756	Taken by Admiral Boscawen off Lagos bay, Aug. 18, 1759
Conquerant	74										Ditto	1746	
Courageux *	74	700	—	—	163	6			20	6	Brest	1743	{ Taken by the Bellona of 74 guns, Capt. R. Faulkner, had 240 men killed, and 110 wounded; whilst Capt. Logie, in the Brilliant of 36 guns, was engaged with two frigates of 32 guns each, which escaped, Aug. 14, 1761
Couronne	74	750	—	—	166	44			22		Rochfort	1749	
Defenseur	74								21		Brest	1754	
Diademe	74										Toulon	1756	
Entreprenant †	74				164	45			22	6	Brest	1754	Burnt at Louisbourg by a bomb, July 21, 1758
Experience †	74												Ditto in the bay of Biscay, by the Orford
Florissant	74				164	9			21	9	Rochfort	1750	
Glorieux	74				164	43			20	6	Ditto	1755	
Guerrier	74								20	8	Toulon	1750	
Hector	74				163	6	44		21		Ditto	1755	
Heros †	74	815			164	43			20	6	Brest	1752	Run ashore, and burnt by Sir Edward Hawke's orders, near Croisie, Nov. 21, 1759
Intrepide	74										Ditto	1747	
Magnifique	74	750	36	18	167	43			20	6	Ditto	1749	
Minotaur	74												
Palmier	74				164	43					Brest	1752	
Protecteur	74												
Prudent †	74					45			22	6	Rochfort	1754	Burnt in the night by the Captains Belfour and Lefory, at Louisbourg, July 25, 1758
Redoutable †	74				163	43	6		20	10	Toulon	1750	Ditto by Admiral Boscawen's squadron in Lagos bay, Aug. 19 1759
Robuste	74												
Sceptre	74				164	43					Brest	1747	
Souveraine	74										Toulon	1756	
Superbe †	74					44			20	6	Brest		Sunk by Sir Edward Hawke, Nov. 20, 1759
Temeraire *	74				164	9	45		22	6	Toulon	1759	Struck to the Warpsight, and was brought off with little damage in Lagos bay, Aug. 10. 1750
Thésée †		815									Brest		

Dauphine Royale	74	750	—	—	154	43	20	10	Ditto	1735		
Firme	70	—	—	—	—	42	20	—	Toulon	1722		
Juste †	70	—	—	—	152	—	—	—	Rochfort	1724		
Achilles *	64	600	24	12	147	40	19	4	Toulon	1747		
Actife	64	—	—	—	—	—	—	—	Brest	—		
Alcide *	64	480	—	—	—	—	—	—	—	—		
Altia	64	600	—	—	—	—	—	—	Toulon	—		
St. Anne *	64	—	—	—	—	—	—	—	Genoa	—		
Belliqueux *	64	417	—	—	—	—	—	—	Toulon	—		
Bienfaisant *	64	600	—	—	152	40	6	19	9	Brest	1752	
Bertine *	64	—	—	—	155	44	9	20	—	—	1760	
Bifarre	64	—	—	—	152	40	6	20	9	Ditto	1751	
Brilliant	64	—	—	—	—	—	—	—	—	—	—	
Capricieux †	64	—	—	—	150	—	—	19	6	Rochfort	1753	
Celebre †	64	—	—	—	148	40	—	19	5	Toulon	—	
Content	64	—	—	—	—	—	—	—	—	Ditto	1747	
Dragon	64	—	24	12	150	40	—	19	10	Brest	—	
Eveillé †	64	—	—	—	150	40	—	19	10	Rochfort	1752	
Fantafque	64	—	—	—	—	—	—	—	—	Toulon	1756	
Hardie	64	—	—	—	—	—	—	—	—	—	—	
Hercule	64	—	—	—	—	40	5	19	4	Brest	1748	
Illuftre	64	—	—	—	—	40	8	20	—	Ditto	1750	
Inflexible †	64	—	—	—	148	40	—	—	—	Rochfort	—	
Lion	64	—	—	—	151	40	6	19	6	Toulon	1751	
Lys *	64	—	—	—	—	—	—	19	4	Brest	1746	
Modeste *	64	600	—	—	—	—	—	—	—	Toulon	1751	
Northumberland †	64	—	—	—	149	40	6	19	—	England	1744	
Opiniatre †	64	—	—	—	150	40	3	19	9	Brest	1750	
Orphée *	64	502	—	—	—	40	—	19	5	Toulon	1749	
Prothée	64	—	—	—	—	40	6	19	4	Brest	—	
Raifonnable *	64	630	—	—	152	—	—	21	1	Ditto	—	
Sage	64	—	—	—	151	—	—	19	6	Toulon	1751	
Solide	64	—	—	—	—	—	—	—	—	Ditto	—	
Solitaire	64	—	—	—	—	—	—	—	—	—	—	
Sphinx	64	—	—	—	152	—	—	21	1	Brest	—	
Triton	64	—	—	—	149	6	40	4	19	3	Toulon	1747
Valliant	64	—	—	—	—	—	—	—	—	Ditto	—	
Vengeur	64	—	—	—	—	—	—	—	—	—	—	
Vierge du Rofair	64	—	—	—	—	—	—	—	—	Genoa	—	
Verge du Sainte	64	—	—	—	—	—	—	—	—	Ditto	—	
Leoparde †	60	—	24	12	143	40	—	18	6	Toulon	1720	
St. Mitchell	60	—	—	—	—	39	4	18	4	Brest	1738	
Warwick *	60	—	—	—	—	—	—	—	—	England	—	
L'Agile †	54	570	18	12	138	37	6	18	7	Rochfort	1750	
Alcion †	54	—	—	—	132	38	8	18	—	Toulon	1724	
Amphion †	56	—	18	8	138	37	—	18	—	Rochfort	1748	
Arc-en-Ciel *	50	578	—	—	—	—	—	—	—	—	—	
Fier	54	—	18	12	140	38	2	17	10	Toulon	—	
Greenwich †	50	—	—	—	—	—	—	—	—	England	—	
Himptaine	54	—	—	—	141	38	4	17	11	Toulon	1749	
Oriflamme *	54	—	18	8	138	37	—	18	—	Ditto	1748	
Sagitaire	—	—	—	—	—	—	—	—	—	Ditto	—	

A GENERAL STATE of the FRENCH NAVY, at the Beginning of the YEAR 1755.

FRIGATES.	Guns.	Men	Metal		Length		Breadth		Depth		Where built	Age	Where and when Taken or Destroyed.
			C.	lb.	Ft.	In.	Ft.	In.	Ft.	In.			
Aquilon †	46	540	12	6	127		33	6	17	6	Toulon	1733	Run ashore and destroyed by the Antelope in the bay of Biscay, May 13, 1757
Juno †	46		18	8	134		35		14		Havre de Grace	1748	Loft going into Port-Mahon
Belleisle *	44	545									St. Malo's	1757	These three ships were the Squadron of the famous Thurot, taken the 28th of February, 1760, after an hour and half's engagement, (in which Thurot was killed) by the Eolus, Capt. Elliot; the Pallas, Capt. Clemens; and the Brilliant, Capt. Logie, off the isle of Man
Le Blonde *	32	400									Havre de Grace		
Terpichore *	26	300											
Abenequise *	40										Quebeck		Taken by the Chichester, called by the English Aurora
Danae *	40	330	12	6									Ditto by the Southampton and Melampe, March 28, 1759.—N.B. Nov mounts 30 twelve pounders
Hebe	40												
Outarde	40												
Saphire	40												
Aigrette *	36												Taken by the Thames and Venus.
Arethusa *	32	270											Taken by the Thames and Venus, in the Bay, May 18, 1759.—N.B. Pierced for 36 guns
Bijon	36												Taken coming out of Louisbourg, whilst the English besieged it.
Echo *	36												
Favorite *	36		12	8	127		33		14		Havre de Grace	1748	Bound from Dunkirk to Martinico, valued at 30,000l. destroyed on the coast of Holland by the Richmond, 1761
Felicite †	36	300	12	6									Loft going out of Dunkirk, in company with the Felicite, Jan. 3, 1761
Harmonie †	36		12	6									Taken by the Unicorn, Capt. Moor
Hermione *	36	320			128		32	6	18		Rochfort	1749	
Le Grand	36												
Malicieux	36												
Baleine *	36												Cut out of Pondicherry by the English boats, October 7th, 1760.
Atalante †	32		12	8	114		30	8	13	8	Toulon	1741	Destroyed in the river St. Laurence
Bouffone *	32	300											Taken by the Thetis, Capt. Moutray, belonging to Admiral Saunders's Squadron, July 15, 1761
Brune *	32	316									Havre de Grace		Ditto by the Venus of 32 guns, Capt. Harrison, January 10, 1761
Diane *	36				124		30	8			Toulon	1742	Taken by the Boreas coming out of Louisbourg, by the Hon. Capt. Boyle
Prince Edward †	32	180											Laden with sugar and indigo from St. Domingo; destroyed by the Hampshire, October 18, 1760
Hyene	32				120		31	10	19		Ditto	1744	
Opalle	32												
Vestale *	32		12	9									Taken by the Unicorn, Lieutenant Symmons, Capt. Hunt being killed the third broadside, Jan. 8, 1761
Zephyre	32		12	8	115						Ditto	1728	
Amathiste	32		12	6									
Machault †	32												
Bienfaisant †	18												These three frigates, with about 22 sloops, &c. laden with provisions and stores, were, on the 8th of July 1760, destroyed in the river St. Laurence, by the Fame, Com. Byron, Repulse and Scarborough
Marquis de Morlaix †	22												
Bellone *	32	220											
Comette *	32	250									Brest	1752	Taken by the Vestal, Capt. Hood, Feb. 21, 1759
Concorde †	30												Ditto by the Bedford, Capt. Deane, March 16, 1761
Fleur de Lys †	30		8		122		31	8	16	3	Ditto	1754	Loft at Conquet
Licorne	30												Run ashore by the Hampshire, and destroyed in the West-Indies, October 15, 1761
Mefiance	30												
Pliade	30		8								Toulon		
Couronne †	30		12	6	117		30	10	14		Ditto	1749	Destroyed in the river St. Laurence
Rose †	30		8	6	120		31		14	6	Ditto	1752	Ditto in the Mediterranean, July 1, 1758, by the Ambuscade and Lyme
Sauvage †	30										Brest		Run ashore by the Isis on the coast of Spain, March 20, 1759
Serieux	30										Ditto		
Surprise	30												
Sulphide	30												
Syrenne *	32	200											Taken by the Boreas, Oct. 18, 1760, off St. Domingo, laden with indigo and sugar
Valeur *	20	160											Ditto by the Lively, the Hon. Capt. Maitland, Oct. 18, 1760, laden with indigo, sugar, &c.
Duke de Choiseul	30												
Chimere	26												
Diligente	26												
Flore	26										Toulon		
Friponne	26										Rochfort		
Minerve	26										Ditto		
Oisseau	26		8								Toulon		
Oiseau de Mer	26										Havre de Grace	1759	
Atalife	24												
Ariefe	24												
Bristol (Privateer)	24												
Cornetto	24				114		30	10	15		Brest	1751	
Emiraude *	24				112		30		14		Havre de Grace	1744	Taken by the Southampton, Sept. 1757
Fidelle †	24				119		31		17	6	Rochfort	1747	Sunk by the French to prevent the English from entering the harbour of Louisbourg
Biche †	16												
Chevre †	16		4										
Tierce	24		8								Havre de Grace	1744	
Bien-Aimé *	22	85											French Merchant Frigate taken in the West-Indies by the Trent, Capt. Lindsay, Jan. 7, 1761
Galatee *	24		6		110		29	6	10	4	Brest	1744	Taken by the Essex, Capt. Campbell, April 7, 1758
Gratieux	24		12		124		32	8	16	4	Toulon	1749	
Heroine	24		8								Brest	1744	
Hirondelle	24										Toulon		
Alutine †	24		6		110		29	6	10	4	Brest	1744	Loft on the Dogger-bank
Thetis	24												
Topaz	24		8		115		30		15		Brest	1750	

Topaz	24	8	115	30	15	Brest	1750
Volage	24					Toulon	
Eclair †	22						
Guirlande *	22						
Maitre	22	6	108	27	8	Canada	1746
Nymphe †	22	6	120	28	10	Rochfort	1750
Petit Cumberlande	20					Brest	
Messager	20	4					
Mignone *	20	6					
Rhinocerot *	20						
Bellecorme	20						
Calypso †	16						
Renommée	18						
Escarboucle *	16	4					
Oracle	16						
Stork *	16					England	
Torterelle *	16						
Epreuve *	14	136	6				
Duke de Hannover *	14		6				
Amaranthe	12		4	86	22	6	10
Anemone *	12		4			5	Brest
Sardine *	14	130					Ditto
Arc-en-Ciel *	12		4				Ditto
Gigine	12						
Courtoisjours	12						
Ecureveil	12						
Hyacinthe	12						
Legrée	12						
Levrette *	12						
Peramine	12						
Penelope	12						
Rennuncle	12						
Pie	10						
Mahoone	8						
Agathé *	6						
Badaire *	6						
Colombe	6						
Roy de Prusse *	6						
Mouche	4						
Postilion	4						
<i>Xebecs and Storeships.</i>							
Indiscret	24	8				Brest	
Requin	24					Toulon	1751
Rufe	18	6	115	25	8	Ditto	1751
Chariot-Royale *	36	144				Ditto	1751
Marie	50						
Loire †	44						
Serenade	40					Brest	
Profonde						Rochfort	
Themas	22	4					
Nasaphine	12						
Charanthe	10						
Sarcelle	6					Brest	
Balleine							
Charreau							
Elephant							
Hermionée							
Penelope							
Duke d'Aquitaine *	50	493					
Vengeance *	32	319					
A Man of War of †	50						
A Frigate of †	36						
Apollo †	50						
St. Florentine *	60	403					
D. de Chartres *	24	294					
Le Haerlem †	64						
Comte de Provence †	64						
La Pomone †	36						
The Hawke *	14						
The Virgin *	10						
Winchelsea *	20						
Repulse *	26						
Le Gramont *	26						
Le D. d'Orleans	60	500					
St. Louis	60						
Le Vainqueur	64	500					
La Fortune	64	600					

Loft at Belleisle
Taken by the Renown, Maidstone, and Rochester

Sunk among the rocks at Majorca by the Hampton-Court, June 12, 1757

Taken by the Eolus, March 20, 1759
Taken by the Isis in the Bay, and burnt

Sunk at Louisbourg

Taken off Portland, Sept. 1757

Taken by the French in the West-Indies
Taken by the Albany sloop, April 1761
Ditto by the Niger, Capt. Bentink, Nov. 24, 1760
Ditto by the Lizard, Capt. Hartwell, Oct. 2, 1758

Taken, with the Sardine, by the Mars and Orford, Feb. 13, 1761
Ditto by the Mars and Orford at the same time

Taken

Taken by the Pallas, in the Bay, Sept. 1759
Ditto by the Marlborough privateer

Taken

Burthen 1000 tons, with stores for North-America, taken by the Torbay, the Hon. Commodore Kepple, Dec. 24, 1756

Taken in the Mediterranean, laden with provisions for Quebec, July 1758—N. B. Mounted but 36 guns

Taken by the Eagle and the Medway the 30th of May, 1758—Pierced by 60 guns
Taken by the Hussar, Capt. Elliot, Jan. 8, 1758

Destroyed at St. Maloes, June 9, 1758

Sunk by the French at the entrance of Louisbourg harbour in 1758
Taken by the Achilles, the Hon. Capt. Barrington, April 4, 1759
Taken by the Windsor, Capt. Samuel Faulkner, March 27, 1759, laden with stores for the East-Indies—Pierced for 60 guns
Destroyed in the East-Indies by Admiral Cornish's squadron
Loft on the Isle de Bourbon, in the East-Indies
Destroyed at Quebec by Lord Colvill's squadron

English vessels cut off the Granadas, in the West-Indies, by Capt. O'Brien, in his majesty's ship the Temple, with some other prizes
Retaken by Admiral Boscawen, off the Land's End
Taken by Sir Charles Saunders's squadron in America
Taken by the Ramillies off Ushant

* Taken 65.

† Destroyed 35.

‡ Loft by Accident 14.